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Master Index to Volumes 201-210

Abbate, M., see L. Soriano	208 (1993) 460
Abbouti Temsamani, M., see A. Pisarchik	206 (1993) 343
Abe, H. and H. Hayashi, Nonradiative process induced by external magnetic fields in the $C_2H_2 \tilde{A}^1A_u$ state near predissociation limit	206 (1993) 337
Abe, Y., see S. Okada	209 (1993) 161
Abou-Zied, O.K., see H.K. Sinha	201 (1993) 433
Abraham, A., see K.T. Wu	210 (1993) 118
Achiba, Y., see T. Wakabayashi	201 (1993) 470
Achiba, Y., see S. Nagase	201 (1993) 475
Achiba, Y., see N. Watanabe	207 (1993) 493
Ackermann, J. and H. Hogreve, A CI study of quasi-bound Ar_2^+	202 (1993) 23
Adelman, D.E., H. Xu and R.N. Zare, Integral rate constant measurements of the reaction $H + D_2 \rightarrow HD(\nu=1, j') + D$ at high collision energies	203 (1993) 573
Agafonov, V., R. Céolin, D. André, J. de Bruijn, A. Gonthier-Vassal, H. Szwarc, N. Rodier, J. Dugué, S. Toscani, P.-Y. Sizaret, C. Fabre, V. Greugny and A. Rassat, Fullerene C_{70} , toluene 1:1 solvate: structural and thermodynamic evidences	208 (1993) 68
Agafonov, V., see R. Céolin	208 (1993) 259
Agmon, N. and R.D. Levine, Reaction yields in intramolecular dissipative kinetics	206 (1993) 143
Agranovich, V.M. and O.A. Dubovsky, Fermi resonance interface modes in organic multilayer structures	210 (1993) 458
Agrawal, P.M., V. Garg and K.R. Patidar, Rotationally inelastic cross sections and the parameters of the potential	208 (1993) 204
Agreiter, J., see G.M. Lask	205 (1993) 31
Agreiter, J., see A.M. Smith	207 (1993) 531
Ågren, H., see Y. Luo	204 (1993) 587; 205 (1993) 555; 207 (1993) 190; 209 (1993) 513
Ågren, H., see S. Svensson	205 (1993) 387
Ågren, H., see O. Vahtras	209 (1993) 201
Aguilar, A., see M. González	204 (1993) 578
Ahlrichs, R., see U. Schneider	210 (1993) 165
Ajayan, P.M., T. Ichihashi and S. Iijima, Distribution of pentagons and shapes in carbon nano-tubes and nano-particles	202 (1993) 384
Akhtar, F., see L. Lian	205 (1993) 487
Akimoto, S. and O. Kajimoto, Solvent-induced shift of the Raman spectra in supercritical fluids	209 (1993) 263
Akulín, V., see E. Borsella	203 (1993) 15
Alarcón-Waess, O., see G. Cruz de León	207 (1993) 294
Alden, R.G., M. Hayashi, J.P. Allen, N.W. Woodbury, H. Murchison and S.H. Lin, Experimental and theoretical studies of femtosecond time-resolved three-dimensional spectra of photosynthetic reaction centers	208 (1993) 350
Alderfer, J.L., see V.I. Danilov	209 (1993) 519

Alexander, M.H., Time-independent determination of total cross sections for molecular photodissociation	201 (1993) 444
Alexander, M.H., see L.J. Rawluk	202 (1993) 291
Alford, J.M., see L.S. Wang	207 (1993) 354
Al-Hassan, K.A., T. Azumi and W. Rettig, The role of the angle of pretwist of some molecules forming twisted intramolecular charge transfer (TICT) states in polymer matrices	206 (1993) 25
Allan, M., see C. Bulliard	209 (1993) 434
Allen, J.P., see R.G. Alden	208 (1993) 350
Allen, M.D., see M.A. Anderson	205 (1993) 415
Allouche, A.R., F. Spiegelmann and M. Aubert-Frécon, Theoretical study of the low-lying electronic states of the BaH ⁺ molecular ion	204 (1993) 343
Almlöf, J., see M. Tomonari	203 (1993) 603
Alonso, J.A., see O.V. Gritsenko	205 (1993) 348
Al-Rubaiey, N., H.M. Frey, B.P. Mason, C. McMahon and R. Walsh, Similarities and differences in the addition reactions of silylene (SiH ₂ , ¹ A ₁) and methylene (CH ₂ , ¹ A ₁) to C ₂ H ₄	204 (1993) 301
Al Shamery, K., see A. Freitag	210 (1993) 10
Alvariño, J.M., see A. Laganà	202 (1993) 284
Amat-Guerri, F., A. Costela, J.M. Figuera, F. Florido and R. Sastre, Laser action from rhodamine 6G-doped poly(2-hydroxyethyl methacrylate) matrices with different cross-linking degrees	209 (1993) 352
Amiot, C., see M. Hafid	210 (1993) 45
Amoretti, G., see R. Caciuffo	201 (1993) 427
Amos, R.D., C.W. Murray and N.C. Handy, Structures and vibrational frequencies of FOOF and FONO using density functional theory	202 (1993) 489
Amos, R.D., see S.M. Colwell	210 (1993) 261
Anderson, L.W., see K.L. Menningen	204 (1993) 573
Anderson, M.A., M.D. Allen, W.L. Barclay Jr. and L.M. Ziurys, The millimeter and sub-millimeter spectrum of the BaOH radical	205 (1993) 415
Ando, Y., see Y. Saito	209 (1993) 72
André, D., see V. Agafonov	208 (1993) 68
André, D., see R. Céolin	208 (1993) 259
André, J.-M., see B. Champagne	210 (1993) 232
Andresen, P., see G. Grünefeld	208 (1993) 369
Andrew, J.J., see G.J. Wilson	210 (1993) 1
Andrews, J.S., C.W. Murray and N.C. Handy, Low-spin open-shell perturbation theory	201 (1993) 458
Andrews, M., see A. Ouhlal	202 (1993) 51
Andrews, S.R. and D.E. Parry, Theoretical analysis of double charge transfer spectra for tungsten hexacarbonyl	205 (1993) 102
Anet, F.A.L. and D.I. Freedberg, Traditional averaging of NMR parameters in the fast exchange limit is valid!	208 (1993) 187
Ángyán, J.G., see V. Dillet	202 (1993) 18
Anisimov, O.A., see B.M. Tadjikov	208 (1993) 32
Antonious, M.S., see H. Wang	205 (1993) 497
Aoiz, F.J., V.J. Herrero, M.M. Nogueira and V. Sáez Rábanos, Quasi-classical trajectory study of the F+H ₂ (D ₂)→HF (DF)+H (D) reaction. Vibrationally state resolved integral and differential cross sections	204 (1993) 359

Aoki, K., H. Fueno, S. Ikuta and O. Nomura, Geometries and stabilities of various conformers of cyanomethylene and other HC ₂ N isomers	202 (1993) 33
Aoki, K., S. Ikuta and A. Murakami, Most stable isomer and singlet-triplet energy separation in the HC ₄ N molecule	209 (1993) 211
Apkarian, V.A., see R. Zadoyan	206 (1993) 475
Aquilanti, V., B. Brunetti, F. Vecchiocattivi, T. Letardi, H. Fang and S. Fu, Role of HCl ionization by metastable neon atoms in XeCl laser kinetics	205 (1993) 229
Aramendía, P.F., see M.E. Daraio	204 (1993) 415
Archibong, E.F. and A.J. Thakkar, Static polarizabilities and hyperpolarizabilities, and multipole moments for Cl ₂ and Br ₂ . Electron correlation and molecular vibration effects	201 (1993) 485
Armentrout, P.B., see C.-X. Su	201 (1993) 199
Armentrout, P.B., see L.M. Russon	204 (1993) 235
Armentrout, P.B., see Y.-M. Chen	210 (1993) 123
Arnold, J., T. Bouché, T. Dreier, J. Wichmann and J. Wolfrum, CARS studies on the heterogeneous relaxation of vibrationally excited hydrogen and deuterium	203 (1993) 283
Arnold, M., see D.J. Kouri	203 (1993) 166
Arratia-Pérez, R., Spin-orbit effects on RuO ₄ and OsO ₄	203 (1993) 409
Arrington, C.A., see L.B. Knight Jr.	204 (1993) 168
Aruga, K., see K. Hiraoka	202 (1993) 167; 208 (1993) 491
Arunan, E., G. Manke II and D.W. Setser, Infrared chemiluminescence studies of H + BrCN and H abstraction by CN reactions. Importance of the HNC channel	207 (1993) 81
Arvanitis, D., see A. Neumann	201 (1993) 108
Asahi, T., see A. Osuka	201 (1993) 223
Asaji, T., see R. Ikeda	210 (1993) 78
Askew, J.W., S.R. McIntyre and G.A. Pfeffer, Assessing the accuracy of the vibrational sudden approximation in collinear atom + triatomic molecule collisions	209 (1993) 190
Asthana, B.P., see R.K. Singh	209 (1993) 390
Aubert-Frécon, M., see A.R. Allouche	204 (1993) 343
Aubertin, F., see M. Womes	201 (1993) 555
Augustyniak, E., see C. Scriptor	201 (1993) 194
Augustyniak, W., see M. Sikorski	209 (1993) 403
Awaji, H., see N. Kobayashi	205 (1993) 51
Azumi, T., see Y. Yamakage	204 (1993) 411
Azumi, T., see K.A. Al-Hassan	206 (1993) 25

Babb, J.F., see T.C. Scott	203 (1993) 175
Baberschke, K., see A. Neumann	201 (1993) 108
Babić, D., A. Graovac and I. Gutman, Comment on "Characteristic polynomials of fullerene cages"	206 (1993) 584
Bach, S.B.H., S.W. McElvany, N.M. Wong and D.C. Parent, Production of aluminum clusters by direct laser vaporization of aluminum nitride	209 (1993) 57
Bachmann, R., Ch. Ottinger and A.F. Vilesov, High-resolution study of collision-induced transitions from $N_2(A\ ^3\Sigma_u^+, v=10)$ to $N_2(B\ ^3\Pi_g, v=2)$	203 (1993) 314
Bacskay, G.B., see A.T. Wong	207 (1993) 360
Bader, R.F.W., see T.A. Keith	210 (1993) 223
Badiali, J.P., see M. Holovko	204 (1993) 511
Bagatur'yants, A.A., see K.B. Shelimov	201 (1993) 84
Baglin, F.G. and E.J. Rose, Dynamical properties of supracritical methane via correlation function analysis	210 (1993) 84
Baguenard, B., M. Pellarin, C. Bordas, J. Lermé, J.L. Vialle and M. Broyer, Shell structure of small indium clusters below $N \approx 200$ atoms	205 (1993) 13
Bagus, P.S., G. Pacchioni and F. Parmigiani, Final state effects for the core-level XPS spectra of NiO	207 (1993) 569
Bahr, C.C., see A. vom Felde	203 (1993) 104
Bai, Y., see B. Niu	201 (1993) 212, 217
Baird, C.N. and H. Wang, The polaron lattice and the mechanism of conduction for doped polyaniline	202 (1993) 501
Baird, D.M., see H. Wang	205 (1993) 497
Bak, K.L., see M. Jaszunski	204 (1993) 608
Baker, C.J., O.M. Gelsen and D.D.C. Bradley, Location of the lowest even parity excited singlet state in poly(<i>p</i> -phenylenevinylene) by two-photon fluorescence spectroscopy	201 (1993) 127
Baker, G.L., see S.A. Hambir	201 (1993) 521
Balakrishnan, N. and N. Sathiyamurthy, Resonances in collinear (He, H_2^+) collisions. A time-dependent quantum-mechanical study	201 (1993) 294
Balasubramanian, K., Matching polynomials of fullerene clusters	201 (1993) 306
Balasubramanian, K., Nuclear spin multiplets for the dodecahedral N_{20} cluster	202 (1993) 271
Balasubramanian, K., Enumeration of isomers of substituted fullerene cages C_{20} - C_{50}	202 (1993) 399
Balasubramanian, K., Energy separations for the electronic states of PH_2^- , PH_2 and PH_2^+	204 (1993) 601
Balasubramanian, K., Topological characterization of five C_{78} fullerene isomers	206 (1993) 210
Balasubramanian, K., Reply to Comment on "Characteristic polynomials of fullerene cages"	206 (1993) 586
Balasubramanian, K., Spectra of matching polynomials	208 (1993) 219
Balasubramanian, K., see S. Roszak	208 (1993) 225
Balasubramanian, K., ESR hyperfine patterns for the radicals derived from C_{60} and C_{70}	210 (1993) 153
Balasubramanian, K., Molecular orbitals and Hadamard matrices	210 (1993) 216
Balbás, L.C., see O.V. Gritsenko	205 (1993) 348
Ballard, J., D. Newnham and M. Page, A novel cryogenic molecular beam. Application to supersonic jet spectroscopy of gases	208 (1993) 295
Ballhausen, C.J., Oscillating Franck-Condon factors	201 (1993) 269
Balooch, M., see A.V. Hamza	201 (1993) 404
Baltisberger, J.H., see S.L. Gann	210 (1993) 405
Balucani, U., G. Ruocco, M. Sampoli, A. Torcini and R. Vallauri, Evolution from ordinary to fast sound in water at room temperature	209 (1993) 408

- Bammel, K., J. Ellis and H.-G. Rubahn, Two-photon laser observation of diffusion of Na atoms through self-assembled monolayers on a Au surface 201 (1993) 101
- Bancroft, G.M., see Z.F. Liu 203 (1993) 337
- Baraille, I., C. Pouchan, F. Marinelli and M. Roche, Calculation of the low-temperature lattice specific heats of Al-Be and Al-Mg alloys 207 (1993) 203
- Barclay Jr., W.L., see M.A. Anderson 205 (1993) 415
- Bardeen, C.J. and C.V. Shank, Femtosecond electronic dephasing in large molecules in solution using mode suppression 203 (1993) 535
- Barkalov, I.M., A.I. Bolshakov, V.I. Goldanskii and Yu.F. Krupyanskii, Vitrification effects in water-protein systems 208 (1993) 1
- Barmentlo, M. and Q.H.F. Vreken, Reorientation of liquid-crystal (LC) molecules in mixed surfactant/LC Langmuir films 209 (1993) 347
- Barnabas, M.V., D.W. Werst and A.D. Trifunac, Elimination and ion-molecule reactions of hexamethylethane and trimethylbutane radical cations in ZSM-5 204 (1993) 435
- Barnabas, M.V., D.W. Werst and A.D. Trifunac, Quadricyclane and norbornadiene radical cations in silicalite: comparison with freon matrices 206 (1993) 21
- Barnes, I., K.H. Becker and L. Ruppert, FTIR product study of the self-reaction of β -hydroxyethyl peroxy radicals 203 (1993) 295
- Barnett, M., see D.A. Ramsay 202 (1993) 406
- Baronovski, A.P., see D.C. Easter 201 (1993) 153; 206 (1993) 329
- Barone, V., C. Minichino, H. Faucher, R. Subra and A. Grand, Theoretical investigation of the EPR spectrum of the cyclopropyl radical 205 (1993) 324
- Barrett, J.J.C., see L.J. Rawluk 202 (1993) 291
- Barrie, P.J., Distorted powder lineshapes in ^{27}Al CP/MAS NMR spectroscopy of solids 208 (1993) 486
- Barszczewicz, A., M. Jaszuński and K. Jackowski, Ab initio calculations of the oxygen atom NMR shielding in the carbonyl group 203 (1993) 404
- Bartczak, W.M. and A. Hummel, Formation of singlet and triplet excited states on charge recombination in tracks of high-energy electrons in nonpolar liquids. A computer simulation study 208 (1993) 232
- Bartels, D.M., P. Han and P.W. Percival, Diffusion of atomic hydrogen in ice- I_h 210 (1993) 129
- Bartlett, R.J., see S.A. Kucharski 206 (1993) 574
- Bartlett, R.J., see D.C. Comeau 207 (1993) 414
- Bartlett, R.J., see D. Cremer 209 (1993) 547
- Bartolotta, A., see S. Campagna 206 (1993) 30
- Bassi, D., L. Menegotti, S. Oss, M. Scotoni and F. Iachello, The $3\leftarrow 0$ CH stretch overtone of benzene 207 (1993) 167
- Bässler, H., see U. Lemmer 203 (1993) 28; 209 (1993) 243
- Bastl, Z., see P. Mikušik 202 (1993) 315
- Batova, E.E., see V.Ya. Shafirovich 210 (1993) 101
- Battle, J.S. and M.D. Gould, Formulae for the spin-dependent unitary group approach 201 (1993) 284
- Baughman, R.H., D.S. Galvão, C. Cui, Y. Wang and D. Tománek, Fullereneynes: a new family of porous fullerenes 204 (1993) 8
- Baum, G. and J.R. Huber, Photodissociation of CF_2Cl_2 at 193 nm investigated by photofragment translational spectroscopy 203 (1993) 261
- Baumert, T., R. Thalweiser and G. Gerber, Femtosecond two-photon ionization spectroscopy of the B state of Na_3 clusters 209 (1993) 29
- Baumgärtel, H., see T. Jaffke 203 (1993) 21

Bauschlicher Jr., C.W., The ground and low-lying excited states of MgH_2^+	201 (1993) 11
Bauschlicher Jr., C.W., see G.C. Schatz	202 (1993) 495
Bauschlicher Jr., C.W., see M. Sodupe	203 (1993) 215; 207 (1993) 19
Bauschlicher Jr., C.W. and H. Partridge, Comment on "A MRCI PS and CASSCF study of the ground state MgO dissociation energy"	205 (1993) 479
Bauschlicher Jr., C.W. and H. Partridge, An accurate determination of the HO_2 heat of formation	208 (1993) 241
Bazhin, N.M., see S.V. Vasenkov	207 (1993) 51
Bazhin, N.M., see M. Sikorski	209 (1993) 403
Beauregard, J.N. and H.R. Mayne, The role of reactant rotation and rotational alignment in the dissociative chemisorption of hydrogen on $\text{Ni}(100)$	205 (1993) 515
Beck, D., see E.J. Heller	202 (1993) 350
Becker, K.H., see I. Barnes	203 (1993) 295
Becker, K.H., B. Engelhardt, H. Geiger, R. Kurtenbach and P. Wiesen, Temperature dependence of the reactions of CH radicals with NO, NH_3 and N_2O in the range 200-1300 K	210 (1993) 135
Becker, S., C. Braatz, J. Lindner and E. Tiemann, State specific photodissociation of SO_2 and state selective detection of the SO fragment	208 (1993) 15
Beglinger, Ch., see R. Rüede	203 (1993) 477
Béguin, F., see A. Messaoudi	202 (1993) 506
Belinskii, M., Heisenberg exchange model for $[\text{Fe}_3(\text{II})\text{Fe}(\text{III})]$ clusters of ferredoxins. A generalized solution of the exchange problem	203 (1993) 389
Bell, A.J., see A. Lallement	204 (1993) 440
Belletête, M., R.S. Sarpal and G. Durocher, Excited-state dynamics and viscosity-dependent internal conversion in 3,3-dimethyl-2-phenyl-3H-indole	201 (1993) 145
Belsky, A.N., see C. Pedrini	206 (1993) 470
Belyaev, A.K., D.T. Colbert, G.C. Groenenboom and W.H. Miller, State-to-state reaction probabilities for $\text{H}^- + \text{H}_2$, D_2 collisions	209 (1993) 309
Benassi, R. and F. Taddei, Bond dissociation in hydrogen peroxide and in the hydrogen peroxide radical anion. A MO ab initio MCSCF approach	204 (1993) 595
Bencheikh, M., see J.-M. Robbe	210 (1993) 170
Bendig, J., R. Schmidt and H.-D. Brauer, Sensitization of $\text{O}_2(^1\Delta_g)$ by N-methylacridone. Solvent and O_2 -concentration dependence and $^{16}\text{O}/^{18}\text{O}$ isotope exchange experiments	202 (1993) 535
Benjamin, I., see K.J. Schweighofer	202 (1993) 379
Benjamin, I. and R.M. Whitnell, Vibrational relaxation of I_2^- in water and ethanol: molecular dynamics simulation	204 (1993) 45
Ben-Nun, M. and R.D. Levine, Coherent vibrational spectroscopy of barrier descent dynamics	203 (1993) 450
Ben-Nun, M., see U. Even	210 (1993) 416
Ben-Nun, M., M. Brouard, J.P. Simons and R.D. Levine, Peripheral chemical reactions	210 (1993) 423
Bensasson, R.V., T. Hill, C. Lambert, E.J. Land, S. Leach and T.G. Truscott, Pulse radiolysis study of buckminsterfullerene in benzene solution. Assignment of the C_{60} triplet-triplet absorption spectrum	201 (1993) 326
Bensasson, R.V., T. Hill, C. Lambert, E.J. Land, S. Leach and T.G. Truscott, Triplet state absorption studies of C_{70} in benzene solution	206 (1993) 197
Bensasson, R.V., J.-L. Gaud, S. Leach, G. Miquel and P. Seta, Transmembrane electron transport mediated by photoexcited fullerenes	210 (1993) 141

Bérce, A. and T. Ziegler, The harmonic force field of benzene calculated by local density functional theory	203 (1993) 592
Berg, L.-E., K. Ekvall, E. Hedin, A. Hishikawa, A. Karawajczyk, S. Kelly and T. Olsson, Lifetime measurements of excited molecular states using a Ti:sapphire laser. Radiative lifetimes of the B $^2\Sigma^+$ and C $^2\Pi$ states of BaBr	209 (1993) 47
Berg, M., see J. Yu	208 (1993) 315
Berghmans, H., see M. Berghmans	205 (1993) 140
Berghmans, M., S. Govaers, F.C. De Schryver and H. Berghmans, Thermoreversible gelation of isotactic poly(styrene) studied by fluorescence spectroscopy	205 (1993) 140
Berlande, J., see A. Lallement	204 (1993) 440
Bernardes, E.S., Y.M. Hornos and J. Hornos, The overtone spectrum of monofluoroacetylene in the algebraic approach	203 (1993) 143
Berryhill, J., S. Pramanick, M.Z. Zgierski, F. Zerbetto and B.S. Hudson, Resonance Raman activity in odd quanta of the trans bending vibration of acetylene: strong vibronic coupling in the \tilde{X} to \tilde{A} and \tilde{X} to \tilde{B} transitions	205 (1993) 39
Bersohn, R., see S. Satyapal	203 (1993) 349
Bersohn, R., see W. Yi	206 (1993) 365
Bertini, I., C. Luchinat and D. Tarchi, Are true scalar proton-proton connectivities ever measured in COSY spectra of paramagnetic macromolecules?	203 (1993) 445
Bertsch, G., see Y. Wang	205 (1993) 521
Bethune, D.S., see H.C. Dorn	203 (1993) 549
Bevan, J.W., A.C. Legon and C.A. Rego, Vibrational predissociative lifetimes of (10^0) Ar...HCl and (10^0) Kr...HCl from time-of-flight measurements in a pulsed-nozzle, FT microwave spectrometer	204 (1993) 551
Bevan, J.W., see R.F. Meads	206 (1993) 488
Bhattacharrya, K., see K. Das	204 (1993) 393
Bhattacharyya, K., see B. Sarkar	204 (1993) 211
Biczok, L., see C.A. Steren	204 (1993) 23
Birke, M.K., see L.M. Russon	204 (1993) 235
Birkett, P.R., H.W. Kroto, R. Taylor, D.R.M. Walton, R.I. Grose, P.J. Hendra and P.W. Fowler, The Raman spectra of C ₆₀ Br ₆ , C ₆₀ Br ₈ and C ₆₀ Br ₂₄	205 (1993) 399
Bishea, G.A., see T. Tsukuda	201 (1993) 351
Bist, H.D., see R.K. Singh	209 (1993) 390
Bitto, H., see D.T. Cramb	206 (1993) 515
Bitto, H., see P.R. Willmott	207 (1993) 93
Bitto, H., see Th. Walther	209 (1993) 455
Biver III, C.J., see B. Stevens	205 (1993) 440
Bixon, M., see J. Jortner	205 (1993) 451
Black, B., G. Majer and A. Pines, SQUID-NMR study of methyl quantum tunneling in a series of carboxylic acids	201 (1993) 550
Black, B., see U. Werner	209 (1993) 17
Blackwell, M., see M. Morgen	209 (1993) 1
Blagoy, Yu.P., I.A. Levitsky, Yu.V. Rubin and V.V. Slavin, One-dimensional migration of triplet excitations in polymers at low temperatures: polyquanylic acid-Tb ³⁺ complex	203 (1993) 265
Blanchard, G.J., see S.A. Hambir	201 (1993) 521
Blazek, K., see J.A. Mares	206 (1993) 9
Blinov, L.M., see S.P. Palto	202 (1993) 308

Blunt, V.M., see C. Manzanares I	207 (1993) 159
Boddenberg, B. and M. Hartmann, The relation between the ^{129}Xe NMR chemical shifts of xenon in the zeolites NaX, NaY and CuNaY	203 (1993) 243
Boddenberg, B. and J. Watermann, Site blocking in silver-exchanged zeolite Y by carbon monoxide and ethene using xenon adsorption and ^{129}Xe NMR spectroscopy	203 (1993) 531
Bodenhausen, G., see V.L. Ermakov	204 (1993) 375
Böhm, M.C., J. Schulte and L. Utrera, On-site charge-density wave formation in one-dimensional chains investigated by Feynman path-integral quantum Monte Carlo calculations	202 (1993) 37
Bohme, D.K., see G. Javahery	204 (1993) 467
Bohme, D.K., see S. Petrie	204 (1993) 473
Böhme, M., see A.W. Ehlers	208 (1993) 111
Böhme, M., see A. Höllwarth	208 (1993) 237
Bolshakov, A.I., see I.M. Barkalov	208 (1993) 1
Bonačić-Koutecký, V., J. Gaus, M.F. Guest, L. Češpiva and J. Koutecký, Ab initio CI study of the electronic structure and geometry of neutral and cationic hydrogenated lithium clusters. Predictions and interpretation of measured properties	206 (1993) 528
Bonang, C.C., S.M. Cameron, J.D. Getty and P.B. Kelly, Preresonance hyper-Raman scattering studies of ethylene glycol	209 (1993) 35
Bonatsos, D. and C. Daskaloyannis, Deformed oscillator for the Morse potential	203 (1993) 150
Bond, P., P.N. Brier, J. Fletcher, P.A. Gorry and M.E. Pemble, Reactive scattering of Cl_2 on GaAs (100). Cl_2 and GaCl product distributions	208 (1993) 269
Bondybey, V.E., see G. Schallmoser	201 (1993) 528
Bondybey, V.E., see I. Fischer	202 (1993) 542
Bondybey, V.E., see G.M. Lask	205 (1993) 31
Bondybey, V.E., see A.M. Smith	207 (1993) 531
Bondybey, V.E., see A. Stangassinger	209 (1993) 372
Bone, R.G.A., An investigation of the structure of weakly bound $(\text{OCS})_2$	206 (1993) 260
Booij, A.S., see R.J.M. Konings	210 (1993) 380
Bordas, C., see B. Baguenard	205 (1993) 13
Borgis, D., see C. Mijoule	208 (1993) 364
Borsella, E., R. Larciprete, A. Nesterenko and V. Akulin, Multiphoton dissociation of zinc dialkyls probed by resonance-enhanced multiphoton ionization	203 (1993) 15
Bortolani, V., see G.P. Brivio	208 (1993) 93
Borysow, J., see C. Scriptor	201 (1993) 194
Botina, J., F. Pichierri and N. Rahman, Isotopic mass as discrete control variable in chaotic processes. The case of molecular vibrations	208 (1993) 153
Botschwina, P., M. Oswald, J. Flügge, Ä. Heyl and R. Oswald, Ab initio spectroscopic constants and the equilibrium geometry of HCCF	209 (1993) 117
Botschwina, P. and J. Flügge, Ab initio vibration-rotation coupling constants and the equilibrium geometries of NCCN and CNCN (Chem. Phys. Letters 180 (1991) 589). Erratum	210 (1993) 495
Böttcher, A., R. Grobecker, T. Greber and G. Ertl, Negative particle emission from a Cs/Ru(0001) surface during exposure to NO and NO_2	208 (1993) 404
Bouché, T., see J. Arnold	203 (1993) 283
Bourson, J., see M.M. Martin	202 (1993) 425
Bouttet, D., see C. Pedrini	206 (1993) 470

Bouwen, A., see J. De Kinder	203 (1993) 12
Bowers, C.R., H.W. Long, T. Pietrass, H.C. Gaede and A. Pines, Cross polarization from laser-polarized solid xenon to $^{13}\text{CO}_2$ by low-field thermal mixing	205 (1993) 168
Bowers, M.T., see G. von Helden	204 (1993) 15
Bowman, J.M., see D. Wang	207 (1993) 227
Braatz, C., see S. Becker	208 (1993) 15
Bradley, D.D.C., see C.J. Baker	201 (1993) 127
Bradley, D.D.C., see A.R. Brown	210 (1993) 61
Branchett, S.E., S.B. Padkjær and J.M. Launay, Quantum dynamical study of the $\text{H} + \text{HCl} \rightarrow \text{H}_2 + \text{Cl}$ reaction	208 (1993) 523
Brandon, J.T., see S.A. Reid	209 (1993) 22
Bratko, D., see A. Jamnik	203 (1993) 465
Bräuchle, C., see B. Sauter	204 (1993) 157
Brauer, H.-D., see J. Bendig	202 (1993) 535
Brauer, H.-D., see U. Katscher	205 (1993) 75
Braune, M. and H. Engel, Compound rotation of spiral waves in a light-sensitive Belousov-Zhabotinsky medium	204 (1993) 257
Brédas, J.L., see C. Quattrocchi	208 (1993) 120
Bree, A.V., see D.P. Chong	210 (1993) 443
Brenn, R., see U. Müller	201 (1993) 387
Brenton, A.G., see R.S. Hiemstra	205 (1993) 236
Brewer, T.R., J.T. Fourkas and M.D. Fayer, Flame temperature measurement using picosecond transient grating experiments	203 (1993) 344
Bridier, I., B. Veyret and R. Lesclaux, Flash photolysis kinetic study of reactions of the BrO radical with BrO and HO_2	201 (1993) 563
Briels, W.J., see C. Huiszoon	203 (1993) 49
Brier, P.N., see P. Bond	208 (1993) 269
Brivio, G.P., T.B. Grimely, V. Bortolani and G. Santoro, Dynamics of adsorption/desorption of Ne-Cu(111): sticking	208 (1993) 93
Brock, A., see C. Manzanares I	207 (1993) 159
Brommer, M. and P. Rosmus, Vibronic spectrum of the CS_2^+ ion in the $X^2\Pi_g$ state	206 (1993) 540
Brosolo, M., P. Decleva and A. Lisini, Sub-nanohartree accuracy from LCAO expansion with B-spline functions. An application to H_2^+ and HeH	203 (1993) 586
Brosolo, M., see A. Lisini	209 (1993) 135
Brouard, M. and R. Mabbs, Vibrationally mediated photodissociation of $\text{H}_2\text{O}_2(4\nu_{\text{OH}})$: rotational state dependent photodissociation cross sections and vibrational state mixing	204 (1993) 543
Brouard, M., see M. Ben-Nun	210 (1993) 423
Brousseau, J.-L., K. Tian, S. Gauvin, R.M. Leblanc and P. Delhaès, Interfacial and vibrational properties of thin films of C_{60}	202 (1993) 521
Brown, A.R., K. Pichler, N.C. Greenham, D.D.C. Bradley, R.H. Friend and A.B. Holmes, Optical spectroscopy of triplet excitons and charged excitations in poly(<i>p</i> -phenylene-vinylene) light-emitting diodes	210 (1993) 61
Brown, J.K. and A.C. Luntz, NO sticking on a Pt(111) surface	204 (1993) 451
Broyer, M., see B. Vezin	202 (1993) 209; 206 (1993) 521
Broyer, M., see B. Baguenard	205 (1993) 13
Brumer, P., see X.-P. Jiang	208 (1993) 179
Brumer, P., see M. Shapiro	208 (1993) 193

Master index to volumes 201-210

Brunetti, B., see V. Aquilanti	205 (1993) 229
Brunvoll, J., see S.J. Cyvin	201 (1993) 273; 205 (1993) 343
Bruzzese, R., see V. Tosa	202 (1993) 555
Bryukov, M.G., A.A. Kachanov, R. Timonnen, J. Seetula, J. Vandoren and O.M. Sarkisov, Kinetics of HNO reactions with O ₂ and HNO	208 (1993) 392
Buchanan, D.N.E., see G.K. Wertheim	202 (1993) 320; 206 (1993) 193
Buckingham, A.D., see F. Liu	207 (1993) 325
Buckingham, A.D., see D.B. Whitehouse	207 (1993) 332
Bulliard, C., M. Allan and S. Leach, Electron energy-loss spectra of fullerene C ₆₀ in the gas phase	209 (1993) 434
Bunker, C.E., see Y.-P. Sun	210 (1993) 111
Burak, I., see G. Nan	209 (1993) 383
Burde, D.H., T.T. Yang and R.A. McFarlane, Temperature dependence of the collisional deactivation of I(² P _{1/2}) by I ₂ and O ₂ from 300 to 600 K	205 (1993) 69
Bürger, H., see M. Halonen	203 (1993) 157; 205 (1993) 380
Burke, L.A., J.O. Jensen, J.L. Jensen and P.N. Krishnan, Theoretical study of water clus- ters. I. Pentamer	206 (1993) 293
Burrow, P.D., see D.M. Pearl	206 (1993) 483
Burt, S.K., see I.A. Topol	204 (1993) 611
Burton, N.A., see O.G. Parchment	203 (1993) 46
Butler, L.G., see Y. Lee	206 (1993) 464
Byrne, H.J., W. Maser, W.W. Rühle, A. Mittelbach, W. Höhle, H.G. von Schnering, B. Movaghar and S. Roth, Time-resolved photoluminescence of solid state fullerenes	204 (1993) 461

Caballol, R., see À. Povill	209 (1993) 126
Caciuffo, R., G. Amoretti, F. Fillaux, O. Francescangeli, S. Melone, M. Prager and F. Uguzzoli, A new class of compounds suited to study the torsional dynamics in the quantum regime: the calixarenes	201 (1993) 427
Cai, Z.-L., Theoretical studies of several electronic states of the NF_2^+ ion	202 (1993) 70
Cai, Z.-L., X.-G. Zhang and X.-Y. Wang, Ab initio study of the electronic spectrum of dichlorocarbene CCl_2	210 (1993) 481
Callis, P.R., see A.A. Rehms	208 (1993) 276
Callis, P.R., see V.I. Danilov	209 (1993) 519
Calvo Hernández, A., see A. Medina	202 (1993) 364
Cameron, S.M., see C.C. Bonang	209 (1993) 35
Campagna, S., A. Bartolotta and G.D. Marco, Photophysics of Ru(II)- and Os(II)-polypyridine complexes in poly(ethyleneoxide) matrices	206 (1993) 30
Campbell, D.J. and L.D. Ziegler, Resonance hyper-Raman scattering in the VUV. Femtosecond dynamics of the predissociated C state of methyl iodide	201 (1993) 159
Campos, F.X., C.J. Waltman and S.R. Leone, Laser vaporization time-of-flight studies of cryogenic Cl_2/Xe films	201 (1993) 399
Cao, J., see H.-P. Looock	206 (1993) 422
Cao, Y.-F. and H.-L. Lin, q -deformed $\text{SU}(1, 1) \times \text{O}(4)$ spectra of diatomic molecules	207 (1993) 317
Capetanakis, F.P., F. Sondermann, S. Höser and F. Stuhl, Temperature-dependent kinetics of the quenching of $\text{O}(^1\text{S})$ by chlorofluoromethanes	206 (1993) 361
Capetanakis, F.P., see S. Höser	208 (1993) 399
Cappus, D., see A. Freitag	210 (1993) 10
Car, R., see K. Laasonen	207 (1993) 208
Cardillo, M.J., see A. vom Felde	203 (1993) 104
Carneiro, J.W.D.M., P.R. Seidl, J.G.R. Tostes, C.A. Taft, B.L. Hammond, M.M. Soto and W.A. Lester Jr., The effects of lone pairs on charge distribution in the tetracyclic norbornyl derivatives	202 (1993) 278
Carrington, A., C.A. Leach and M.R. Viant, Nuclear hyperfine structure in the electronic millimetre wave spectrum of H_2^+	206 (1993) 77
Carrington Jr., T., see A. McNichols	202 (1993) 464
Carrington Jr., T., see R.E. Hoffmeyer	207 (1993) 407
Cartland, H.E. and S.L. Nickolaissen, CO internal excitation in the photodissociation of $\text{Cr}(\text{CO})_6$ at 278 nm	210 (1993) 327
Casey, S.M. and D.G. Leopold, Negative ion photoelectron spectroscopy of Cr_2H and Cr_2D	201 (1993) 205
Caspary, N., see G. Schallmoser	201 (1993) 528
Castanheira, E.M.S. and J.M.G. Martinho, Thermochromic shifts of pyrene excimer fluorescence	206 (1993) 45
Castex, M.C., see R. Karnbach	203 (1993) 248
Castleman Jr., A.W., see Y. Yamada	203 (1993) 330; 204 (1993) 133
Castro, L., see A. Laganà	202 (1993) 284
Cazzoli, G., G. Cotti and L. Dore, Millimeter and submillimeter-wave spectrum of CHCl_3 . Determination of the h_3 splitting constant	203 (1993) 227
Cederbaum, L.S., see K. Zähringer	206 (1993) 247
Cederbaum, L.S., see P. Schmelcher	208 (1993) 548
Cederbaum, L.S., see T. Sommerfeld	209 (1993) 216
Cenian, A., see S. Hennig	205 (1993) 354

Céolin, R., see V. Agafonov	208 (1993) 68
Céolin, R., V. Agafonov, D. André, A. Dworkin, H. Szwarc, J. Dugué, B. Keita, L. Nadjo, C. Fabre and A. Rassat, Fullerene C ₆₀ , 2CCl ₄ solvate. A solid-state study	208 (1993) 259
Češpiva, L., see V. Bonačić-Koutecký	206 (1993) 528
Cha, M., D. Neher, F.W. Embs, S. Mittler-Neher and G. Stegeman, Determination of the two first non-trivial orientational order parameters in LB films of rod-like molecules by third-order sum frequency mixing	202 (1993) 44
Chabal, Y.J., see K. Raghavachari	206 (1993) 156
Chai, Y., see L.S. Wang	207 (1993) 354
Chakrabarti, P. and S. Pal, Difference in the energies of interactions at the binding sites in protein structures	201 (1993) 24
Chakraborty, T. and E.C. Lim, Dual fluorescence from the photoexcited van der Waals dimer of dibenzofuran in a supersonic jet. Intermediate-case level structure of the coupling between the dimer excited state and the lower-lying excimer state	207 (1993) 99
Chakravarti, N. and K.L. Sebastian, Theory of barrierless electronic relaxation in solution. Delta function sink models	204 (1993) 496
Challacombe, M., see J. Cioslowski	203 (1993) 137
Chambers, C.C., see T.D. Sewell	208 (1993) 125
Champagne, B., D.H. Mosley and J.-M. André, The convergence of the direct lattice sums in the random phase approximation method applied to periodic infinite systems	210 (1993) 232
Chan, T.-W.D., see P.Y. Yau	202 (1993) 93
Chandrasekhar, J., see A. Rathna	206 (1993) 217
Chandrashekar, T.K., see D. Reddy	202 (1993) 120
Chandrashekar, T.K., see R.P. Pandian	202 (1993) 127
Chang, B.-C., J.R. Dunlop and T.A. Miller, Laser excitation and dispersed fluorescence spectra of the Ne·OH \tilde{A} - \tilde{X} electronic transition	207 (1993) 55
Chang, B.-C., J.R. Dunlop, J.M. Williamson, T.A. Miller and M.C. Heaven, Potential surface and dissociation energies from high-resolution electronic spectroscopy of Ne·OH	207 (1993) 62
Chang, X., D.L. Thompson and L.M. Raff, Intramolecular energy transfer rates using Fourier transform methods	206 (1993) 137
Chang, Y.-T. and G.H. Loew, The reaction of atomic oxygen with methanethiol. A theoretical study of the structures and the potential energy surface	205 (1993) 543
Chapo, C., see J. Szczepanski	205 (1993) 434
Chapovsky, P.L., D. Papoušek and J. Demaison, Nuclear spin conversion rates in ¹² CH ₃ F and ¹³ CH ₃ F molecules	209 (1993) 305
Charra, F., see N. Pfeffer	201 (1993) 357
Chatzidimitriou-Dreismann, C.A., see H. Lehr	201 (1993) 278
Chauvan, T., see J. Zyss	206 (1993) 409
Chen, C., Q. Ran, S. Yu and X. Ma, Quenching of CH(A ² Δ and B ² Σ ⁻) by NO, CHBr ₃ and amine molecules	203 (1993) 307
Chen, H., see D. Xu	210 (1993) 315
Chen, H.-Y., see X.-G. Peng	209 (1993) 233
Chen, J.-A., T.-S. Lee, T.-Y. Dong and S.-L. Lee, Effect of twisting mode on electron-transfer rate of mixed-valence biferrocenium systems	205 (1993) 80
Chen, Y., see W. Ding	204 (1993) 119
Chen, Y., see M. Morgen	209 (1993) 1
Chen, Y.-M. and P.B. Armentrout, Collision-induced dissociation of Ag(C ₆ H ₆) ⁺	210 (1993) 123

Chergui, M., N. Schwentner and A. Tramer, Spectroscopy of the NO molecule in N ₂ and mixed N ₂ /Kr matrices	201 (1993) 187
Chernozatonskii, L.A., Layer structures of covalently bound C ₆₀ barrelenes and LB films	209 (1993) 229
Chernyshev, A.V., see T.S. Mashnin	207 (1993) 105
Chevako, P., see K.L. Menningen	204 (1993) 573
Chevaleyre, J., see B. Vezin	206 (1993) 521
Chibante, L.P.F., see D. Heymann	207 (1993) 339
Chichinin, A.I., Measurement of Cl(² P _{1/2}) quantum yield for the photodissociation of NOCl, ICl, PCl ₃ , Cl ₂ O and COCl ₂	209 (1993) 459
Child, M.S. and Q. Zhu, Local mode Coriolis quenching in tetrahedral hydrides	207 (1993) 116
Childs, M.A., see K.L. Menningen	204 (1993) 573
Cho, G. and J.P. Yesinowski, Multiple-quantum NMR dynamics in the quasi-one-dimensional distribution of protons in hydroxyapatite	205 (1993) 1
Chong, D.P. and A.V. Bree, Calculated infrared intensities for the bending mode in some small linear molecules	210 (1993) 443
Chou, P.-T., M.L. Martinez and J.H. Clements, The observation of solvent-dependent proton-transfer/charge-transfer lasers from 4'-diethylamino-3-hydroxyflavone	204 (1993) 395
Christiansen, O. and P. Jørgensen, The hyperpolarizability of neon revisited	207 (1993) 367
Christmann, K., see A. Neumann	201 (1993) 108
Christophorou, L.G., see T. Jaffke	203 (1993) 21
Chronister, E.L., see D. L'Espérance	201 (1993) 229
Chu, C.-H., see S.-L. Lee	207 (1993) 220
Chu, S.-I., see G. Yao	204 (1993) 381
Chua, M., see P.A. Tanner	209 (1993) 539
Chudinov, G.E. and D.V. Napolov, A new method of geometry optimization for molecules in solution in the framework of the Born-Kirkwood-Onsager approach	201 (1993) 250
Cioslowski, J., A. Nanayakkara and M. Challacombe, Rapid evaluation of atomic properties with mixed analytical/numerical integration	203 (1993) 137
Claxton, T.A. and S.F.J. Cox, Ab initio minimal basis set calculations on C ₆₀ Mu	207 (1993) 31
Clementi, E., see O. Matsuoka	202 (1993) 13
Clements, J.H., see P.-T. Chou	204 (1993) 395
Cleveland, J., see L.B. Knight Jr.	204 (1993) 168
Clifton, C.L., see R.E. Huie	205 (1993) 163
Clogston, A.M., see H.K. McDowell	210 (1993) 274
Clough, S., A.J. Horsewill and M.R. Johnson, Approximate rotational quantisation and the Pauli principle	208 (1993) 143
Clouthier, D.J., see J. Karolczak	201 (1993) 409
Coatsworth, L.L., see Z.F. Liu	203 (1993) 337
Cogdell, R.J., see Y. Koyama	208 (1993) 479
Coitiño, E.L. and O.N. Ventura, Isomerization of the formaldehyde radical cation and the failure of MP2	202 (1993) 479
Colbert, D.T., see A.K. Belyaev	209 (1993) 309
Colburn, A.W., see P.Y. Yau	202 (1993) 93
Collins, S., see A. Lavin	204 (1993) 96; 207 (1993) 513
Colwell, S.M., C.W. Murray, N.C. Handy and R.D. Amos, The determination of hyperpolarisabilities using density functional theory	210 (1993) 261
Combariza, J.E., N.R. Kestner and J. Jortner, Microscopic solvation of anions in water clusters	203 (1993) 423

- Comeau, D.C. and R.J. Bartlett, The equation-of-motion coupled-cluster method. Applications to open- and closed-shell reference states 207 (1993) 414
- Comer, K.R. and S.C. Foster, Infrared spectroscopy of the products of a corona-excited supersonic expansion 202 (1993) 216
- Comes, F.J., see T. Haas 202 (1993) 108
- Conard, J., see A. Messaoudi 202 (1993) 506
- Conceicao, J., see L.M. Russon 204 (1993) 235
- Connor, J.N.L., see M.A. Vincent 203 (1993) 415
- Connor, J.N.L., P. McCabe, D. Sokolovski and G.C. Schatz, Nearside-farside analysis of angular scattering in elastic, inelastic and reactive molecular collisions 206 (1993) 119
- Conradi, M.S., see J. Haase 209 (1993) 287
- Coombe, R.D., see R.W. Schwenz 207 (1993) 526
- Coonan, M.H. and G.L.D. Ritchie, Cotton-Mouton effect, magnetic anisotropy and molecular quadrupole moment of acetylene 202 (1993) 237
- Cooper, A.I., S.G. Kazarian and M. Poliakoff, Supercritical fluid impregnation of polyethylene films, a new approach to studying equilibria in matrices; the hydrogen bonding of fluoroalcohols to $(\eta^5\text{-C}_5\text{Me}_5)\text{Ir}(\text{CO})_2$ and the effect on C-H activation 206 (1993) 175
- Cordfunke, E.H.P., see R.J.M. Konings 210 (1993) 380
- Corvaja, C., L. Franco, L. Pasimeni, A. Toffoletti and L. Montanari, Transient EPR emission spectra of a free radical trapped in a single crystal of chloranil 210 (1993) 355
- Costela, A., see F. Amat-Guerri 209 (1993) 352
- Costes, M., see C. Naulin 202 (1993) 452
- Coté, R., see A. Ioannidis 205 (1993) 46
- Cotti, G., see G. Cazzoli 203 (1993) 227
- Couris, S., see Ch. Kassner 208 (1993) 27
- Cox, S.F.J., see T.A. Claxton 207 (1993) 31
- Cramb, D.T., S.C. Wallace and H. Bitto, Coherent picosecond phenomena in $\text{V } ^1\text{B}_2 \text{ CS}_2$ 206 (1993) 515
- Cramer, C.J., Where is the unpaired electron in the phosphoranyl radicals H_3PS^- and $\text{H}_3\text{PSH}^?$ 202 (1993) 297
- Cramer, C.J. and D.G. Truhlar, Polarization of the nucleic acid bases in aqueous solution, Chem. Phys. Letters 198 (1992) 74. Erratum 202 (1993) 567
- Craw, J.S., see J. Zeng 206 (1993) 323
- Cremer, D., J. Gauss, E. Kraka, J.F. Stanton and R.J. Bartlett, A CCSD(T) investigation of carbonyl oxide and dioxirane. Equilibrium geometries, dipole moments, infrared spectra, heats of formation and isomerization energies 209 (1993) 547
- Creuzet, S. and J. Langlet, Theoretical determination of structural parameters for *s*-triazine and some derivatives. Comparison between ab initio and semi-empirical calculations 208 (1993) 511
- Crowell, P., see G.D. Hager 204 (1993) 420
- Cruz de León, G., M. Medina-Noyola, O. Alarcón-Waess and H. Ruiz-Estrada, Time-dependent friction on a charged tracer in a Brownian multicomponent plasma 207 (1993) 294
- Cui, C., see R.H. Baughman 204 (1993) 8
- Cullis, P.G., see P.Y. Yau 202 (1993) 93
- Curl, R.F., see C.L. Morter 207 (1993) 153
- Curry, J.M., see C.J.S.M. Simpson 210 (1993) 5
- Curtiss, L.A. and G. Scholz, The vapour phase complex HF-AlF_3 . A new ab initio molecular orbital study 205 (1993) 550
- Cuvellier, J., see A. Lallement 204 (1993) 440

Master index to volumes 201-210

- Cybo-Ottone, A., S. De Silvestri, V. Magni, M. Nisoli, A.M. Gallazzi, C. Romanoni, G. Zerbi and A. Musco, Femtosecond and picosecond exciton dynamics in poly-alkoxy-thiophene and poly-alkoxy-thiophene-vinylene 208 (1993) 345
- Cyvin, B.N., see S.J. Cyvin 201 (1993) 273; 205 (1993) 343
- Cyvin, S.J., B.N. Cyvin and J. Brunvoll, General formulations for some polycyclic hydrocarbons. Constant-isomer series and a formula index 201 (1993) 273
- Cyvin, S.J., J. Brunvoll and B.N. Cyvin, Isomers of polycyclic conjugated hydrocarbons with different ring sizes 205 (1993) 343

Dai Hung, N., see M.M. Martin	202 (1993) 425
Dalgarno, A., see T.C. Scott	203 (1993) 175
Daly, G.M., J. Gao and M.S. El-Shall, Proton solvation in ternary clusters of water-methanol-acetonitrile. Evidence for cyclic structures	206 (1993) 500
Danilov, V.I., O.N. Slyusarchuk, J.L. Alderfer, P.R. Callis and J.J.P. Stewart, A theoretical study of the cytosine excimer state	209 (1993) 519
Dapprich, S. and G. Frenking, The keto/enol tautomerism of selenoformamide and telluroformamide	205 (1993) 337
Dapprich, S., see A.W. Ehlers	208 (1993) 111
Dapprich, S., see A. Höllwarth	208 (1993) 237
Daragan, V.A. and K.H. Mayo, Asymmetric ^{13}C NMR multiplet relaxation and dipolar-CSA cross correlation for glycine $^{13}\text{C}_\alpha$ methylenes in peptides	206 (1993) 393
Daraio, M.E., P.F. Aramendía and E.S. Román, Interaction of singlet and triplet excited states with the same quencher in micelles	204 (1993) 415
Das, K., N. Sarkar, D. Majumdar and K. Bhattacharrya, Excited-state intramolecular proton transfer and rotamerism of 2-(2'-hydroxyphenyl) benzimidazole (Chem. Phys. Letters 198 (1992) 443). Erratum	204 (1993) 393
Das, P.K., see A. Samanta	204 (1993) 269
Das, R., see S. Mitra	202 (1993) 549
Da Silva, A.B.F., see G.L. Malli	201 (1993) 37
Da Silva, A.B.F., G.L. Malli and Y. Ishikawa, Relativistic universal Gaussian basis set for Dirac-Fock-Coulomb and Dirac-Fock-Breit SCF calculations on heavy atoms	203 (1993) 201
Daskaloyannis, C., see D. Bonatsos	203 (1993) 150
Dastoor, H.E., P. Gardner and D.A. King, Identification of two tilted adsorbed μ_2 -methoxy species on Ni{110} using RAIRS	209 (1993) 493
David, W.I.F., see R.G. Delaplane	201 (1993) 75
Davis, J.E., R.S. Hughes Jr. and H.W.H. Lee, Investigation of optically generated transient electronic defects and protonic transport in hydrogen-bonded molecular solids. Isomorphs of potassium dihydrogen phosphate	207 (1993) 540
Dawes, J.M. and S.C. Wallace, Excited state proton transfer in jet-cooled 3-hydroxyflavone and its methanol complexes	208 (1993) 335
Daymo, E., see B. Niu	201 (1993) 212
De Bruijn, J., see V. Agafonov	208 (1993) 68
Decleva, P., see M. Brosolo	203 (1993) 586
Decleva, P., see A. Lisini	209 (1993) 135
De Dios, A.C. and E. Oldfield, Methods for computing nuclear magnetic resonance chemical shielding in large systems. Multiple cluster and charge field approaches	205 (1993) 108
Degrève, L. and C. Quintale Jr., Structural characteristics of the chlorine ion solvation shell in infinitely dilute aqueous solution	208 (1993) 530
De Haas, M.P., see J.M. Warman	210 (1993) 397
De Heer, W.A. and D. Ugarte, Carbon onions produced by heat treatment of carbon soot and their relation to the 217.5 nm interstellar absorption feature	207 (1993) 480
De Kinder, J., A. Bouwen and D. Schoemaker, Coupling between the $^{14}\text{N}_2$ vibrations in $\beta\text{-N}_2$ and in $\beta\text{-(}^{15}\text{N}_2)_x(^{14}\text{N}_2)_{1-x}$ mixed crystals	203 (1993) 12
Delaplane, R.G., W.I.F. David, R.M. Ibberson and C.C. Wilson, The ab initio crystal structure determination of α -malonic acid from neutron powder diffraction data	201 (1993) 75
Deleuze, M., see J. Delhalle	210 (1993) 21

Delhaès, P., see J.-L. Brousseau	202 (1993) 521
Delhalle, J., J. Riga, J.P. Denis, M. Deleuze and M. Dosière, Evidence in the XPS valence band of the fold structure at the surface of polyethylene lamellae	210 (1993) 21
De Lisio, C., see V. Tosa	202 (1993) 555
De Maaijer-Gielbert, J., see M.F.H. van Tol	205 (1993) 207
Demaison, J., see P.L. Chapovsky	209 (1993) 305
Demuth, C., see P. Felder	208 (1993) 21
Deng, F., see Y. Yue	208 (1993) 311
Deng, H.T., see Y. Yamada	203 (1993) 330
Denis, J.P., see X. Wu	203 (1993) 211
Denis, J.P., see J. Delhalle	210 (1993) 21
Denisov, N.N., see V.A. Nadtochenko	208 (1993) 431
Depew, M.C., see I.A. Shkrob	202 (1993) 133
Derrick, P.J., see P.Y. Yau	202 (1993) 93
De Schryver, F.C., see M. Berghmans	205 (1993) 140
De Silvestri, S., see A. Cybo-Ottone	208 (1993) 345
Dessent, C.E., see T. Tsukuda	201 (1993) 351
Destriau, M., see M.T. Rayez	206 (1993) 278
Dhenaut, C., see J. Zyss	206 (1993) 409
Dias, J.R., Fullerenes to benzenoids and the leapfrog algorithm	204 (1993) 486
Dias, J.R., Benzenoids to fullerenes and the circumscribing algorithm	209 (1993) 439
Dick, B., see R. Fraenkel	203 (1993) 523
Dickinson, A.S., see E.L. Heck	204 (1993) 389
Diehl, P., see R.K. Mazitov	201 (1993) 543
Diener, M., see L.S. Wang	207 (1993) 354
Dietz, K., C. Schmidt, M. Warken and B.A. Hess, The acceleration of convergence of many-body perturbation theory: unlinked-graph shift in Møller-Plesset perturbation theory	207 (1993) 281
Díez, E., see J. San-Fabián	206 (1993) 253
Dillet, V., D. Rinaldi, J.G. Ángyán and J.-L. Rivail, Reaction field factors for a multipole distribution in a cavity surrounded by a continuum	202 (1993) 18
Di Lorenzo-Filho, O. and J.R. Rios Leite, Degenerate four wave mixing with multiple resonances in SF ₆	203 (1993) 325
Ding, L., see A. Goumri	204 (1993) 296
Ding, W., Y. Chen and X. Fu, Charge transfer satellites in X-ray photoelectron spectra of lanthanum in SrZrO ₃ lattice	204 (1993) 119
Dodelet, J.P., see A. Ioannidis	205 (1993) 46
Dogane, I., see Z. Yoshida	201 (1993) 481
Domcke, W., A.L. Sobolewski and C. Woywod, Internal conversion funnel in benzene and pyrazine: adiabatic and diabatic representation	203 (1993) 220
Domcke, W., see A. Staib	204 (1993) 505
Domcke, W., see L. Seidner	205 (1993) 117
Domen, K., see J. Kubota	204 (1993) 273
Dong, T.-Y., see J.-A. Chen	205 (1993) 80
Donovan, R.J., T. Ridley, K.P. Lawley and P.J. Wilson, Observation of the three lowest $\Omega=1$ ion-pair states of ICl using double-resonance ionisation nozzle-cooled spectroscopy	205 (1993) 129
Donovan, R.J., K.P. Lawley, T. Ridley and P.J. Wilson, Observation of the f^0+ (1D_2) ion-pair state of ICl using double-resonance ionisation nozzle-cooled spectroscopy	207 (1993) 129

Dore, L., see G. Cazzoli	203 (1993) 227
Dorigo, A.E., see J. Moc	204 (1993) 65
Dorn, H.C., J. Gu, D.S. Bethune, R.D. Johnson and C.S. Yannoni, The nature of fullerene solution collisional dynamics. A ^{13}C DNP and NMR study of the $\text{C}_{60}/\text{C}_6\text{D}_6/\text{TEMPO}$ system	203 (1993) 549
Dorthe, G., see C. Naulin	202 (1993) 452
Dosière, M., see J. Delhalle	210 (1993) 21
Dotan, I. and A.A. Viggiano, Temperature, kinetic energy, and rotational temperature dependences for the reactions of $\text{Ar}^+ (^2\text{P}_{3/2})$ with O_2 and CO	209 (1993) 67
Douhal, A., see A. Yartsev	207 (1993) 546
Dreier, T., see J. Arnold	203 (1993) 283
Dresselhaus, G., see R.A. Jishi	206 (1993) 187; 209 (1993) 77
Dresselhaus, G., see R. Saito	210 (1993) 159
Dresselhaus, M.S., see R.A. Jishi	206 (1993) 187; 209 (1993) 77
Dresselhaus, M.S., see R. Saito	210 (1993) 159
Dressler, R.A., R.H. Salter and E. Murad, Energy partitioning in hyperthermal $\text{O}^+ + \text{H}_2\text{O}$ charge-transfer collisions	204 (1993) 111
Du, M., X. Xie, Y. Jia, L. Mets and G.R. Fleming, Direct observation of ultrafast energy transfer in PSI core antenna	201 (1993) 535
Du, Y., see Y. Zhang	205 (1993) 508
Duan, X. and S. Scheiner, Ground and excited state intramolecular proton transfer in OCCNN ring	204 (1993) 36
Dubnova, N., see K. Tokhadze	202 (1993) 87
Dubovsky, O.A., see V.M. Agranovich	210 (1993) 458
Dugourd, Ph., see B. Vezin	202 (1993) 209; 206 (1993) 521
Dugué, J., see V. Agafonov	208 (1993) 68
Dugué, J., see R. Céolin	208 (1993) 259
Duncan, M.A., see J.S. Pilgrim	202 (1993) 203; 210 (1993) 322
Duncan, M.A., see C.S. Yeh	206 (1993) 509
Dunlop, J.R., see B.-C. Chang	207 (1993) 55, 62
Durocher, G., see M. Belletête	201 (1993) 145
Durrant, J., see Q. Hong	202 (1993) 183
Dushkin, C.D., H. Yoshimura and K. Nagayama, Nucleation and growth of two-dimensional colloidal crystals	204 (1993) 455
Dutt, A.K., Asymptotically stable limit cycles in a model of glycolytic oscillations	208 (1993) 139
Dworkin, A., see R. Céolin	208 (1993) 259
Dyall, K.G. and K. Fægri Jr., Finite nucleus effects on relativistic energy corrections	201 (1993) 27
Dyall, K.G. and H. Partridge, Relativistic corrections to the properties of the alkali fluorides	206 (1993) 565

Easter, D.C. and A.P. Baronavski, Ultrafast relaxation in the fluorescent state of the laser dye DCM	201 (1993) 153
Easter, D.C., A.P. Baronavski and M. Hawley, Spectroscopic evidence for a nonrigid-rigid transition in isotopically labelled (benzene) ₁₃	206 (1993) 329
Ebbesen, T.W., see H. Hiura	202 (1993) 509
Ebbesen, T.W., see K. Tanigaki	203 (1993) 33
Ebbesen, T.W., see M. Kosaka	203 (1993) 429
Ebbesen, T.W., H. Hiura, J. Fujita, Y. Ochiai, S. Matsui and K. Tanigaki, Patterns in the bulk growth of carbon nanotubes	209 (1993) 83
Echt, O., see T. Rauth	201 (1993) 345
Eden, J.G., see G. Rodriguez	205 (1993) 371
Edwards, P.P., see J.A. Howard	204 (1993) 128
Effenberger, F., see N. Holl	205 (1993) 25
Egorov, V.V. and D.V. Makhov, The effects of surfactants in ripple dynamics	208 (1993) 420
Ehlers, A.W., M. Böhme, S. Dapprich, A. Gobbi, A. Höllwarth, V. Jonas, K.F. Köhler, R. Stegmann, A. Veldkamp and G. Frenking, A set of f-polarization functions for pseudo-potential basis sets of the transition metals Sc-Cu, Y-Ag and La-Au	208 (1993) 111
Ehlers, A.W., see A. Höllwarth	208 (1993) 237
Eigenbrot, I.V., see H. Yu	202 (1993) 141
Eikema, K.S.E., see P.F. Levelt	210 (1993) 307
Eisenthal, K.B., see X. Zhao	202 (1993) 513
Eklund, P.C., see R.A. Jishi	206 (1993) 187
Ekvall, K., see L.-E. Berg	209 (1993) 47
Eland, J.H.D., Dynamics of three-body reactions in ICN ²⁺ and related molecules	203 (1993) 353
Eletskii, A.V. and E.V. Stepanov, Thermodynamic restrictions for chemical laser efficiency	209 (1993) 525
Elfeninat, F., see A. Selmani	201 (1993) 416
Ellermann, T., see O.J. Nielsen	203 (1993) 302
Ellis, A.M., E.S.J. Robles and T.A. Miller, Dispersed fluorescence spectroscopic study of the ground electronic state of silver trimer	201 (1993) 132
Ellis, J., see K. Bammel	201 (1993) 101
El-Shall, M.S., see G.M. Daly	206 (1993) 500
Embs, F.W., see M. Cha	202 (1993) 44
Emele, P., see N. Holl	205 (1993) 25
Endicott, J.F., see X. Song	204 (1993) 400
Endo, T., see Z. Yoshida	201 (1993) 481
Endrédi, G. and C.-M. Liegener, Matrix-block negative-factor-counting treatment of electron correlation in long alkane chains	210 (1993) 477
Engel, C., see A.M. Smith	207 (1993) 531
Engel, H., see M. Braune	204 (1993) 257
Engelhardt, B., see K.H. Becker	210 (1993) 135
Engels, B., see A. Metropoulos	204 (1993) 333
Engert, C., see K. Kneipp	207 (1993) 450
Engst, P., see P. Kubát	205 (1993) 429
Ermakov, V.L. and G. Bodenhausen, Broadband excitation in magnetic resonance by self-refocusing doubly frequency-modulated pulses	204 (1993) 375
Ermler, W.C., see M.M. Marino	206 (1993) 271
Ernst, R.R., see M. Tomaselli	205 (1993) 145

Master index to volumes 201-210

Ernzerhof, M., C.M. Marian and S.D. Peyerimhoff, Energy derivative versus expectation value approach: the dipole moment of CO	204 (1993) 59
Ertl, G., see A. Böttcher	208 (1993) 404
Eryomin, V.V., see I.M. Umanskii	208 (1993) 517
Esseffar, M., A. Luna, O. Mó and M. Yáñez, High-level ab initio calculations on the structures and relative stabilities of [O, P, H] systems and their cations	209 (1993) 557
Etzkorn, T., J. Fitzer, S. Muris and J. Wolfrum, Determination of absolute methyl- and hydroxyl-radical concentrations in a low pressure methane-oxygen flame	208 (1993) 307
Even, U., I. Schek and J. Jortner, High-energy cluster-surface collisions	202 (1993) 303
Even, U., M. Ben-Nun and R.D. Levine, Time evolution of very high Rydberg states of large aromatic molecules. A kinetic analysis	210 (1993) 416
Evensky, D.A. and P.G. Wolynes, Transport of dipolar excitons in disordered systems	209 (1993) 185
Eyal, A. and S.R. Rotman, The determination of acceptor distribution from the donor decay time response in co-doped crystals	206 (1993) 113
Eychmüller, A., see A. Hässelbarth	203 (1993) 271
Eychmüller, A., A. Mews and H. Weller, A quantum dot quantum well: CdS/HgS/CdS	208 (1993) 59

Fabre, C., see V. Agafonov	208 (1993) 68
Fabre, C., see R. Céolin	208 (1993) 259
Fægri Jr., K., see K.G. Dyall	201 (1993) 27
Fægri Jr., K., see O. Swang	207 (1993) 397
Fagan, P.J., see Z.G. Li	207 (1993) 148
Fagerström, J. and S. Stafström, Theoretical studies of optical absorption spectra of soliton containing polyenes	203 (1993) 81
Fagerström, K., A. Lund, G. Mahmoud, J.T. Jodkowski and E. Ratajczak, Kinetics of the cross reaction between methyl and hydroxyl radicals	204 (1993) 226
Fagerström, K., A. Lund, G. Mahmoud, J.T. Jodkowski and E. Ratajczak, Kinetics of the gas-phase reaction between ethyl and hydroxyl radicals	208 (1993) 321
Faigel, G., see K. Kamarás	202 (1993) 325
Fain, B., S.H. Lin, J. Grotemeyer and E.W. Schlag, A theoretical study of laser desorption of molecules induced by an ultrashort pulse	202 (1993) 357
Fain, B. and S.H. Lin, Phase-dependent absorption and stimulated emission in femtosecond pump-probe experiments	207 (1993) 287
Fan, S.M., I.D. Fletcher, B. Gündoğan, N.J. Heaton, G. Kothe, G.R. Luckhurst and K. Praefcke, The symmetry of the nematic phase of a thermotropic liquid crystal: biaxial or uniaxial?	204 (1993) 517
Fang, H., see V. Aquilanti	205 (1993) 229
Farhat, S.K., see C.L. Morter	207 (1993) 153
Farhoosh, R., see H.A. Frank	207 (1993) 88
Fárník, M., Z. Herman, T. Ruhaltinger, J.P. Toennies and R.G. Wang, Single-electron charge transfer between He^{2+} and NO. Population of vibrational states of $\text{NO}({}^1\Sigma^+)$ product from high-resolution scattering experiments	206 (1993) 376
Faucher, H., see V. Barone	205 (1993) 324
Fayer, M.D., see T.R. Brewer	203 (1993) 344
Fearon, J.E., see R.J.M. Konings	206 (1993) 57
Fehér, M., T. Pasinszki and T. Veszprémi, The ab initio equilibrium structures of germyl pseudohalides	205 (1993) 123
Fehér, M., see T. Pasinszki	207 (1993) 384
Felder, P., B.-M. Haas and J.R. Huber, Isotope specific photodissociation of SO_2 at 193.3 nm	204 (1993) 248
Felder, P. and C. Demuth, Photodissociation of CFCl_3 at 193 nm investigated by photofragment translational spectroscopy	208 (1993) 21
Feldmann, J., see U. Lemmer	203 (1993) 28
Felker, P.M., see S.M. Ohline	207 (1993) 563
Feng, J., see J. Li	203 (1993) 560
Fernández, A. and L. Godínez Mora Tovar, Coarse-grained dynamics for proton exchange in RNA	208 (1993) 148
Fernández, A., see L. Soriano	208 (1993) 460
Fernandez-Prini, R., see D. Laria	205 (1993) 260
Ferrando, R., R. Spadacini and G.E. Tommei, Diffusion in a periodic potential in the strong collision limit	202 (1993) 248
Ferraudi, G., Magnetic field effects in the charge transfer photochemistry of Co(III) complexes	203 (1993) 487
Feyereisen, M., G. Fitzgerald and A. Komornicki, Use of approximate integrals in ab initio theory. An application in MP2 energy calculations	208 (1993) 359

Feyereisen, M.W., see M. Tomonari	203 (1993) 603
Fielding, H.H., see F. Merkt	202 (1993) 153
Figuera, J.M., see F. Amat-Guerri	209 (1993) 352
Fillaux, F., see R. Caciuffo	201 (1993) 427
Finkbeiner, H.C., see K.A. Gingerich	207 (1993) 23
Fiory, A.T., see R.C. Haddon	203 (1993) 433
Fischer, I., A. Lochschmidt, A. Strobel, G. Niedner-Schatteburg, K. Müller-Dethlefs and V.E. Bondybey, The non-resonant two-photon zero kinetic energy photoelectron spectrum of CS ₂	202 (1993) 542
Fischer, R., see U. Lemmer	203 (1993) 28
Fitzer, J., see T. Etzkorn	208 (1993) 307
Fitzgerald, G., see M. Feyereisen	208 (1993) 359
Flament, J.P., see H. Lavendy	205 (1993) 456
Flament, J.-P., see J.-M. Robbe	210 (1993) 170
Fleming, G.R., see M. Du	201 (1993) 535
Fletcher, I.D., see S.M. Fan	204 (1993) 517
Fletcher, J., see P. Bond	208 (1993) 269
Florance, S., see G.C. Schatz	202 (1993) 495
Florido, F., see F. Amat-Guerri	209 (1993) 352
Flügge, J., see P. Botschwina	209 (1993) 117; 210 (1993) 495
Flynn, G.W., see C.-K. Ni	210 (1993) 333
Fodor-Csorba, K., see K. Kamarás	202 (1993) 325
Foster, S.C., see K.R. Comer	202 (1993) 216
Fourkas, J.T., see T.R. Brewer	203 (1993) 344
Fournier, T., T.-H. Tran-Thi, N. Herlet and C. Sanchez, Charge transfer dynamics of porphyrin-phthalocyanine heterodimers in hybrid sol-gel films	208 (1993) 101
Fowler, P.W., D.E. Manolopoulos, D.B. Redmond and R.P. Ryan, Possible symmetries of fullerene structures	202 (1993) 371
Fowler, P.W., H.M. Kelly and E. Steiner, Polarisability and dispersion properties of SF ₆	203 (1993) 189
Fowler, P.W., Comment on "Characteristic polynomials of fullerene cages"	203 (1993) 611
Fowler, P.W., see D.E. Manolopoulos	204 (1993) 1
Fowler, P.W., see P.R. Birkett	205 (1993) 399
Fowler, P.W., see H.M. Kelly	206 (1993) 568
Fowler, P.W., see G. Orlandi	208 (1993) 441
Fox, D.J., see M.J. Frisch	206 (1993) 225
Fox, D.J., see B.G. Johnson	206 (1993) 239
Fraenkel, R., U. Samuni, Y. Haas and B. Dick, A matrix isolation study of the fluorescence of anthracene and anthracene-ammonia adducts in solid argon	203 (1993) 523
Francescangeli, O., see R. Caciuffo	201 (1993) 427
Francis, A.H., see M.R. Savina	205 (1993) 200
Francisco, J.S., see Z. Li	209 (1993) 151
Franco, L., see C. Corvaja	210 (1993) 355
François, J.-P., see Z. Slanina	201 (1993) 54
Frank, H.A., R. Farhoosh, R. Gebhard, J. Lugtenburg, D. Gosztola and M.R. Wasielewski, The dynamics of the S ₁ excited states of carotenoids	207 (1993) 88
Freedberg, D.I., see F.A.L. Anet	208 (1993) 187
Freeman, C.G., see D. Lennon	201 (1993) 120

Freeman, R., see Ě. Kupěe	204 (1993) 524
Freitag, A., V. Staemmler, D. Cappus, C.A. Ventrice Jr., K. Al Shamery, H. Kuhlenbeck and H.-J. Freund, Electronic surface states of NiO(100)	210 (1993) 10
Frenking, G., see W. Koch	203 (1993) 205
Frenking, G., see S. Dapprich	205 (1993) 337
Frenking, G., see A.W. Ehlers	208 (1993) 111
Frenking, G., see A. Höllwarth	208 (1993) 237
Frenking, G., see V. Jonas	210 (1993) 211
Frenklach, M., see H. Wang	205 (1993) 271
Freudenberg, Th., see V. Stert	204 (1993) 287
Freudenberg, Th., see W. Radloff	205 (1993) 171
Freund, H.-J., see R.M. Jaeger	203 (1993) 41
Freund, H.-J., see A. Freitag	210 (1993) 10
Frey, H.M., see N. Al-Rubaiey	204 (1993) 301
Fricke, B., see S. Hackel	206 (1993) 91
Friedman, R.S., see D.W. Schwenke	203 (1993) 565
Friedrich, J., see J. Kikas	207 (1993) 143
Friend, R.H., see A.R. Brown	210 (1993) 61
Frisch, M.J., B.G. Johnson, P.M.W. Gill, D.J. Fox and R.H. Nobes, An improved criterion for evaluating the efficiency of two-electron integral algorithms	206 (1993) 225
Froudakis, G., see M. Mühlhäuser	204 (1993) 617
Fu, K.-J., see Y. Zheng	202 (1993) 148
Fu, S., see V. Aquilanti	205 (1993) 229
Fu, X., see W. Ding	204 (1993) 119
Fueno, H., see K. Aoki	202 (1993) 33
Fueno, H. and S. Ikuta, Multireference CI study of the electron affinity of C ₃	204 (1993) 320
Fuggle, J.C., see L. Soriano	208 (1993) 460
Fujihira, M., see M. Yoshizawa	207 (1993) 461
Fujimaki, S., see K. Hiraoka	202 (1993) 167; 208 (1993) 491
Fujimura, Y., see E. Hiroike	201 (1993) 437
Fujimura, Y., see Y. Naitoh	205 (1993) 423
Fujita, J., see T.W. Ebbesen	209 (1993) 83
Fukuda, A., see K. Kajikawa	205 (1993) 225
Fukushima, N., see K. Waizumi	205 (1993) 317
Fulara, J., M. Jakobi and J.P. Maier, Electronic spectra of the C ₇₀ molecule and C ₇₀ ⁺ , C ₇₀ ⁻ ions in neon matrices	206 (1993) 203
Fülscher, M.P., see R. González-Luque	204 (1993) 323
Funasaka, H., see M. Sakurai	208 (1993) 425
Furuki, M., see J. Kubota	204 (1993) 273
Furusawa, A., see T. Suga	210 (1993) 411

Gabriel, H., see S. Hennig	205 (1993) 354
Gadonas, R., see K. Kalnins	209 (1993) 63
Gadre, S.R. and I.H. Shrivastava, Topography-driven electrostatic charge models for molecules	204 (1993) 350
Gaede, H.C., see C.R. Bowers	205 (1993) 168
Gallagher, H.G., see T.P.J. Han	208 (1993) 63
Gallazzi, A.M., see A. Cybo-Ottone	208 (1993) 345
Galli, C., K. Wynne, S.M. LeCours, M.J. Therien and R.M. Hochstrasser, Direct measurement of electronic dephasing using anisotropy	206 (1993) 493
Galvão, D.S., see R.H. Baughman	204 (1993) 8
Gann, S.L., J.H. Baltisberger and A. Pines, Dynamic-angle spinning without sidebands	210 (1993) 405
Ganz, M., J. Strempel and W. Kiefer, Continuum resonance Raman scattering in $^{127}\text{I}^{35}\text{Cl}$. Evidence of two excited electronic states	207 (1993) 110
Gao, J., see G.M. Daly	206 (1993) 500
Gao, M.-L., see X.-G. Peng	209 (1993) 233
Gao, Y., M. Yamaga, B. Henderson and K.P. O'Donnell, Emission spectrum of $\text{Ti}^{3+}:\text{Gd}_3\text{Sc}_2\text{Al}_3\text{O}_{12}$ garnet crystal	210 (1993) 67
Gao, Z., see N. Zhang	205 (1993) 178
Garaud, J.-L., see R.V. Bensasson	210 (1993) 141
García Cuesta, I., A. Sánchez de Merás and I. Nebot Gil, Reply to Comment on "A MRCI PS and CASSCF study of the ground state MgO dissociation energy"	205 (1993) 484
García de la Vega, J.M. and B. Miguel, Single-exponent Slater function expansions of the He atom 1s orbital and its isoelectronic series	207 (1993) 270
García-Vela, A., R.B. Gerber, D.G. Imre and J.J. Valentini, Quantum resonances and interference effects in the UV photodissociation of Ar-HCl	202 (1993) 473
García-Vela, A., see J. Segall	207 (1993) 504
Gardiner, W., see H.-X. Yang	207 (1993) 69
Gardiner Jr., W.C., see S.M. Hwang	205 (1993) 157
Gardner, P., see H.E. Dastoor	209 (1993) 493
Garg, V., see P.M. Agrawal	208 (1993) 204
Gaus, J., see V. Bonačić-Koutecký	206 (1993) 528
Gauss, J., see D. Cremer	209 (1993) 547
Gauvin, S., see J.-L. Brousseau	202 (1993) 521
Gdanitz, R.J., A formulation of multiple-reference CI with terms linear in the interelectronic distances	210 (1993) 253
Gebhard, R., see H.A. Frank	207 (1993) 88
Gehlen, J.N., see C.H. Mak	206 (1993) 130
Geiger, H., see K.H. Becker	210 (1993) 135
Gelsen, O.M., see C.J. Baker	201 (1993) 127
Genotelle, M., see X. Wu	203 (1993) 211
Gerber, G., see T. Baumert	209 (1993) 29
Gerber, R.B., see A. García-Vela	202 (1993) 473
Gerber, R.B., see J. Segall	207 (1993) 504
Gericke, K.-H., see T. Haas	202 (1993) 108
Getty, J.D., X. Liu and P.B. Kelly, Anomalous polarization: evidence for vibronic coupling in the allyl radical	201 (1993) 236
Getty, J.D., see C.C. Bonang	209 (1993) 35

Geudtner, G., see K. Jug	208 (1993) 537
Ghanem, N., see C. Naulin	202 (1993) 452
Ghiordànescu, V., M. Vodà and C. Pedrini, Spectroscopy of Mn^{2+} ions in $CdCl_2$	205 (1993) 410
Ghose, K.B., see N. Vaval	209 (1993) 292
Ghosh, A., see R. Ikeda	210 (1993) 78
Ghosh, H.N., D.K. Palit, A.V. Sapre, K.V.S. RamaRao and J.P. Mittal, Dual sites of solvation for electrons produced by photoionisation in aqueous micellar solutions	203 (1993) 5
Gijbels, R., see Z. Slanina	201 (1993) 54
Gilbert, J.V., see R.W. Schwenz	207 (1993) 526
Gilibert, M., see M. González	204 (1993) 578
Gill, P.M.W., see M.J. Frisch	206 (1993) 225
Gill, P.M.W., see B.G. Johnson	206 (1993) 229, 239
Gill, P.M.W., B.G. Johnson and J.A. Pople, A standard grid for density functional calculations	209 (1993) 506
Gilles, M.K., see M.L. Polak	210 (1993) 55
Gingerich, K.A., H.C. Finkbeiner and R.W. Schmude Jr., The enthalpy of formation of the C_6 molecule from mass spectrometric equilibrium measurements	207 (1993) 23
Girardet, C., see S. Picaud	209 (1993) 340
Glukhovtsev, M.N. and P. von R. Schleyer, Structures, bonding and energies of N_6 isomers (Chem. Phys. Letters 198 (1992) 547). Erratum	204 (1993) 394
Glukhovtsev, M.N., P. von R. Schleyer, N.J.R. van E. Hommes and V.I. Minkin, Are the C_{4v} complexes of cyclobutadiene with CO, NO^+ , and CS minima?	205 (1993) 529
Glukhovtsev, M.N., P. von R. Schleyer and K. Lammertsma, Can the H_4^{2+} dication exist?	209 (1993) 207
Gobbi, A., see W. Koch	203 (1993) 205
Gobbi, A., see A.W. Ehlers	208 (1993) 111
Gobbi, A., see A. Höllwarth	208 (1993) 237
Göbel, E.O., see U. Lemmer	203 (1993) 28; 209 (1993) 243
Godínez Mora Tovar, L., see A. Fernández	208 (1993) 148
Goldanskii, V.I., see I.M. Barkalov	208 (1993) 1
Goldby, I.M., R.J. Guest and R.E. Palmer, Electron-stimulated ion-molecule reactions in O_2 films on graphite	206 (1993) 181
Goldman, S., see C.G. Joslin	208 (1993) 86
Goldner, Ph., see X. Wu	203 (1993) 211
Gonser, U., see M. Womes	201 (1993) 555
Gonthier-Vassal, A., see V. Agafonov	208 (1993) 68
González, M., M. Gilibert, A. Aguilar and R. Sayós, Effect of reagent rotation on the dynamics of the $O^+ + H_2$ ion-molecule reaction and isotopic variants	204 (1993) 578
González-Elipe, A.R., see L. Soriano	208 (1993) 460
González-Luque, R., M. Merchán, M.P. Fülcher and B.O. Roos, An ab initio study of the electron affinity of O_2	204 (1993) 323
Gopidas, K.R., see A. Samanta	204 (1993) 269
Gordon, M.S., see M.A. Vincent	203 (1993) 415
Gordon, M.S., see S. Su	204 (1993) 306
Görner, H., see L. Sun	208 (1993) 43
Gorry, P.A., see P. Bond	208 (1993) 269
Gosztola, D., see H.A. Frank	207 (1993) 88
Goto, Y., see J. Kubota	204 (1993) 273

Gotts, N.G., see G. von Helden	204 (1993) 15
Goudsmit, G.-H. and H. Paul, Time-resolved EPR investigation of triplet state C ₆₀ . Triplet-triplet annihilation, CIDEP, and quenching by nitroxide radicals	208 (1993) 73
Gough, T.E. and T.-Y. Wang, The ν_2 bending mode infrared spectrum of clustered carbon dioxide	207 (1993) 517
Gould, I.R., see K.I. Trollope	209 (1993) 113
Gould, M.D., see J.S. Battle	201 (1993) 284
Goumri, A., W.-J. Yuan, L. Ding and P. Marshall, An investigation of the gas-phase reaction of atomic bromine with disilane: implications for the Si ₂ H ₅ -H bond strength	204 (1993) 296
Govaers, S., see M. Berghmans	205 (1993) 140
Govindaraj, A., see V. Varma	203 (1993) 545
Grabowska, A., see K. Kownacki	210 (1993) 373
Grand, A., see V. Barone	205 (1993) 324
Grandinetti, F., J. Hrušák and H. Schwarz, The NF ₂ H ⁺ and NH ₂ F ⁺ radical cations: conventional structures or ion-molecule complexes? A GAUSSIAN-1 study	204 (1993) 53
Granucci, G. and M. Persico, Benzene-O ₂ interaction potential from ab initio calculations	205 (1993) 331
Graovac, A., see D. Babić	206 (1993) 584
Gray, C.G., see C.G. Joslin	208 (1993) 86
Gray, K.A., see U. Stafford	205 (1993) 55
Greber, T., see A. Böttcher	208 (1993) 404
Greenham, N.C., see A.R. Brown	210 (1993) 61
Gregory, B., see L.B. Knight Jr.	204 (1993) 168
Greiner, A., see U. Lemmer	203 (1993) 28; 209 (1993) 243
Greugny, V., see V. Agafonov	208 (1993) 68
Grewer, G., see S.P. Palto	202 (1993) 308
Grimely, T.B., see G.P. Brivio	208 (1993) 93
Grimme, S., Ab initio study of the structure and dipole moment of azulene	201 (1993) 67
Gritsenko, O.V., A. Rubio, L.C. Balbás and J.A. Alonso, Non-local exchange and local Coulomb correlation energy density functionals for finite many-electron systems	205 (1993) 348
Grobecker, R., see A. Böttcher	208 (1993) 404
Groenenboom, G.C., see A.K. Belyaev	209 (1993) 309
Gropen, O., see O. Swang	207 (1993) 397
Grose, R.I., see P.R. Birkett	205 (1993) 399
Grotemeyer, J., see B. Fain	202 (1993) 357
Grotemeyer, J., E.W. Schlag and S.H. Lin, Experimental and theoretical studies of matrix-assisted laser desorption of neutral organic molecules	209 (1993) 499
Grünefeld, G. and P. Andresen, LIF imaging applied to the photodissociation of polyatomic molecules	208 (1993) 369
Gryczynski, I., see J.R. Lakowicz	206 (1993) 455
Gu, B., see Z. Li	207 (1993) 41
Gu, J., see H.C. Dorn	203 (1993) 549
Guest, M.F., see V. Bonačić-Koutecký	206 (1993) 528
Guest, R.J., see I.M. Goldby	206 (1993) 181
Guilleme, J., see J. San-Fabián	206 (1993) 253
Gullion, T., see J.H. Walton	203 (1993) 237
Gündoğan, B., see S.M. Fan	204 (1993) 517
Gunion, R.F., see M.L. Polak	210 (1993) 55

Master index to volumes 201-210

Guo, G.L., K.T. Tang and C.L. Yiu, The exchange energy of H_2^+ calculated from the exact first-order wavefunction of polarization perturbation theory	203 (1993) 583
Guo, T., see L.S. Wang	207 (1993) 354
Gustafson, T.L., see K. Iwata	210 (1993) 50
Gutman, I., V. Petrović and B. Mohar, Cyclic conjugation effects: individual, collective and overall	203 (1993) 378
Gutman, I., see D. Babić	206 (1993) 584
Gutmann, M., see D.M. Willberg	201 (1993) 506
Güttler, F., see M. Pirotta	208 (1993) 379
Gygax, H., see M. Pirotta	208 (1993) 379

- Haas, B.-M., see P. Felder 204 (1993) 248
- Haas, T., K.-H. Gericke, C. Maul and F.J. Comes, Photodissociation dynamics of HN_3 .
The N_3 fragment internal energy distribution 202 (1993) 108
- Haas, W., see U. Müller 201 (1993) 387
- Haas, Y., see E. Zingher 202 (1993) 442
- Haas, Y., see R. Fraenkel 203 (1993) 523
- Haase, J. and M.S. Conradi, Sensitivity enhancement for NMR of the central transition
of quadrupolar nuclei 209 (1993) 287
- Hackel, S., D. Heinemann, D. Kolb and B. Fricke, Calculations of the polycentric linear
molecule H_3^+ with the finite element method 206 (1993) 91
- Hackett, P.A., see L. Lian 205 (1993) 487
- Haddon, R.C., G.P. Kochanski, A.F. Hebard, A.T. Fiory, R.C. Morris and A.S. Perel,
Electrical resistivity and stoichiometry of Ba_xC_{60} films 203 (1993) 433
- Hadjiev, V.G., see K. Kamarás 202 (1993) 325
- Hafid, M., C. Amiot and J. Vergès, Laser-induced fluorescence of BaCl . The $\text{B } ^2\Sigma^+ - \text{X } ^2\Sigma^+$
electronic system 210 (1993) 45
- Hager, G.D., D. Kopf, D. Plummer, T. Salsich and P. Crowell, Demonstration of a repet-
itively pulsed magnetically gain-switched chemical oxygen iodine laser 204 (1993) 420
- Haky, J.E., see H. Wang 205 (1993) 497
- Hales, D.A., see C.-X. Su 201 (1993) 199
- Hall, G., A.G. Suits and B.J. Whitaker, Resonant degenerate four wave mixing detection
of HCO 203 (1993) 277
- Halonen, L., see M. Halonen 203 (1993) 157; 205 (1993) 380
- Halonen, M., L. Halonen, H. Bürger and P. Moritz, Approaching the local mode limit: the
second stretching overtone band system of SbH_3 near 5500 cm^{-1} 203 (1993) 157
- Halonen, M., L. Halonen and H. Bürger, The second stretching overtone band system of
 $^{116}\text{SnH}_4$ at 5539 cm^{-1} : how close to the local mode limit? 205 (1993) 380
- Halvick, P., see D.W. Schwenke 203 (1993) 565
- Hamaguchi, H., see T. Yuzawa 202 (1993) 221
- Hamaguchi, H. and K. Iwata, Exchange model of vibrational dephasing in S_1 trans-stilbene
in solution and its possible correlation with the isomerization reaction 208 (1993) 465
- Hamanoue, K., see T. Nakayama 209 (1993) 367
- Hambir, S.A., T. Yang, G.J. Blanchard and G.L. Baker, Excitation migration in the po-
lydiacetylene DCHD 201 (1993) 521
- Hamilton, N.B., see Y.-P. Sun 210 (1993) 111
- Hamilton, T.P., Y. Xie and H.F. Schaefer III, HP_4^- : the monoconjugate base from tetra-
phosphabicyclobutane. Evidence for an exo ground state conformation in the gas phase 208 (1993) 106
- Hammerstad-Pedersen, J.M., M.H. Jensen, Y.I. Kharkats, A.M. Kuznetsov and J. Ulstrup,
A view of fast charge separation in the bacterial photosynthetic reaction centre involv-
ing weak environmental damping of a populated auxiliary chlorophyll state 205 (1993) 591
- Hammond, B.L., see J.W.D.M. Carneiro 202 (1993) 278
- Hamza, A.V. and M. Balooch, The chemisorption of C_{60} on $\text{Si}(100)-(2 \times 1)$ 201 (1993) 404
- Han, D., see W. Zhu 204 (1993) 538
- Han, K.-L., G.-Z. He and N.-Q. Lou, Comparison of the dynamics of the reactions of Ba
with aromatic halides and alkyl halides. LIF studies of the reactions of Ba with $\text{C}_6\text{H}_5\text{X}$
($\text{X} = \text{Cl}, \text{Br}, \text{I}$) 203 (1993) 509
- Han, P., see D.M. Bartels 210 (1993) 129

- Han, R., see Z. Li 207 (1993) 41
- Han, T.P.J., see J.F.H. Nicholls 202 (1993) 560; 207 (1993) 575
- Han, T.P.J., M.A. Scott, F. Jaqué, H.G. Gallagher and B. Henderson, Nd^{3+} - Cr^{3+} pairs in $\text{Gd}_3\text{Sc}_2\text{Ga}_3\text{O}_{12}$ garnet crystals 208 (1993) 63
- Hanada, T., see T. Nakayama 209 (1993) 367
- Hanazaki, I., see T. Kono 201 (1993) 166
- Hanazaki, I., Formation of lambda-doublet components of OH in the bimolecular reactions: $\text{H} + \text{OX} \rightarrow \text{OH} + \text{X}$ 201 (1993) 301
- Hanazaki, I., see M. Takayanagi 208 (1993) 5
- Handy, N.C., see J.S. Andrews 201 (1993) 458
- Handy, N.C., see R.D. Amos 202 (1993) 489
- Handy, N.C., see R. Tarroni 207 (1993) 195
- Handy, N.C., see S.M. Colwell 210 (1993) 261
- Hardacre, C., R.M. Ormerod and R.M. Lambert, Low-temperature carbon monoxide oxidation on Pt(111). Dependence of apparent activation energy on reactant gas composition 206 (1993) 171
- Haritakis, S., see Ch. Kassner 208 (1993) 27
- Harmony, M.D., see S. Xu 205 (1993) 502
- Harrington, J.E. and K.C. Smyth, Laser-induced fluorescence measurements of formaldehyde in a methane/air diffusion flame 202 (1993) 196
- Harris, C.B., see B.J. Schwartz 203 (1993) 503
- Harris, R.A. and L. Pratt, A simple effective Hamiltonian for low-frequency linear responses 203 (1993) 399
- Harris, R.A., see Y. Shi 205 (1993) 91
- Harris, R.D., see D.W. Urry 201 (1993) 336
- Harrison, N.J. and B.R. Jennings, Laser-induced Kerr constants for alkanolic acids at 532 and 1064 nm inducing wavelengths 210 (1993) 393
- Hartmann, M., see B. Boddenberg 203 (1993) 243
- Hartz, C.L., see R.F. Meads 206 (1993) 488
- Hashemi, R., see T. Jaffke 203 (1993) 21
- Hashimoto, K., S. He and K. Morokuma, Structures, stabilities and ionization potentials of $\text{Na}(\text{H}_2\text{O})_n$ and $\text{Na}(\text{NH}_3)_n$ ($n=1-6$) clusters. An ab initio MO study 206 (1993) 297
- Hässelbarth, A., A. Eychmüller and H. Weller, Detection of shallow electron traps in quantum sized CdS by fluorescence quenching experiments 203 (1993) 271
- Hastings, G., see Q. Hong 202 (1993) 183
- Hatanaka, M., see K. Yoshizawa 202 (1993) 483
- Hauser, A., Four-wave-mixing in the Fe(II) spin-crossover system $[\text{Zn}_{1-x}\text{Fe}_x(\text{ptz})_6](\text{BF}_4)_2$ (ptz = 1-propyltetrazole) 202 (1993) 173
- Hawley, M., see D.C. Easter 206 (1993) 329
- Hayamizu, K., see S. Hayashi 203 (1993) 319; 205 (1993) 597
- Hayashi, H., see H. Murai 203 (1993) 482
- Hayashi, H., see H. Abe 206 (1993) 337
- Hayashi, M., see R.G. Alden 208 (1993) 350
- Hayashi, S. and K. Hayamizu, Line shapes in CP/MAS NMR spectra of half-integer quadrupolar nuclei 203 (1993) 319
- Hayashi, S. and K. Hayamizu, Line shapes in CP/MAS NMR spectra of half-integer quadrupolar nuclei (Chem. Phys. Letters 203 (1993) 319). Erratum 205 (1993) 597
- Hayashi, T., see Y. Saito 204 (1993) 277

Hayes, J.M., see W.-H. Kim	207 (1993) 443
Hayes, L.C., see D.W. Urry	201 (1993) 336
Haynes, G.R., G.A. Voth and E. Pollak, A theory for the thermally activated rate constant in systems with spatially dependent friction	207 (1993) 309
He, G.-Z., see K.-L. Han	203 (1993) 509
He, M., H. Wang and B.R. Weiner, Production and laser-induced fluorescence spectrum of aluminum sulfide	204 (1993) 563
He, S., see K. Hashimoto	206 (1993) 297
Heath, J.R. and F.K. LeGoues, A liquid solution synthesis of single crystal germanium quantum wires	208 (1993) 263
Heaton, N.J., see S.M. Fan	204 (1993) 517
Heaven, M.C., see B.-C. Chang	207 (1993) 62
Hebard, A.F., see R.C. Haddon	203 (1993) 433
Heck, E.L., A.S. Dickinson and V. Vesovic, Testing the Mason-Monchick approximation for transport properties of pure diatomic gases	204 (1993) 389
Hedin, E., see L.-E. Berg	209 (1993) 47
Heesel, H., see U. Lemmer	203 (1993) 28
Heidecke, S.A., see L.M. Russon	204 (1993) 235
Heidler, R., H. Metz, M. le Maire, G. Schaack and W. Windsch, EPR line shape of Mn^{2+} in BCCD single crystals in the incommensurate phase	209 (1993) 299
Heinemann, D., see S. Hackel	206 (1993) 91
Heinrich, P., see Ch. Kassner	208 (1993) 27
Heitele, H., see F. Pöllinger	209 (1993) 251
Helgaker, T., see M. Jaszunski	204 (1993) 608
Helgaker, T., see O. Vahtras	209 (1993) 201
Heller, E.J. and D. Beck, Nonclassical Franck-Condon processes	202 (1993) 350
Henderson, B., see J.F.H. Nicholls	202 (1993) 560; 207 (1993) 575
Henderson, B., see T.P.J. Han	208 (1993) 63
Henderson, B., see Y. Gao	210 (1993) 67
Henderson, J.R., see C.R. Le Sueur	206 (1993) 429
Hendra, P.J., see P.R. Birkett	205 (1993) 399
Hennig, S., A. Cenian and H. Gabriel, Rotational relaxation of HCl in an Ar matrix	205 (1993) 354
Hepburn, J.W., see W. Kong	203 (1993) 497
Hepworth, P.A., see J. McCombie	206 (1993) 37
Herlet, N., see B. Lebeau	206 (1993) 15
Herlet, N., see T. Fournier	208 (1993) 101
Herman, M., see A. Pisarchik	206 (1993) 343
Herman, Z., see M. Fárník	206 (1993) 376
Hernandez Hernandez, M.L., see A. Laganà	202 (1993) 284
Herrero, V.J., see F.J. Aoiz	204 (1993) 359
Hershberger, J.F., see R.W. Quandt	206 (1993) 355
Hess, B.A., see K. Dietz	207 (1993) 281
Hester, R.E., P. Matousek, J.N. Moore, A.W. Parker, W.T. Toner and M. Towrie, Vibrational mode-selective effects in the picosecond time-resolved resonance Raman spectrum of singlet excited trans-stilbene	208 (1993) 471
Heyl, Ä., see P. Botschwina	209 (1993) 117
Heymann, D. and L.P.F. Chibante, Photo-transformations of C_{60} , C_{70} , $C_{60}O$, and $C_{60}O_2$	207 (1993) 339

Hiemstra, R.S., A.B. van der Kamp, W.J. van der Zande, A.G. Brenton and M. Larsson, Vibrational distribution of NO^{2+} ions formed by electron impact ionization	205 (1993) 236
Hikichi, K., see K. Takegoshi	206 (1993) 450
Hill, T., see R.V. Bensasson	201 (1993) 326; 206 (1993) 197
Hillier, I.H., see O.G. Parchment	203 (1993) 46
Hillier, I.H., see K.I. Trollope	209 (1993) 113
Hirabayashi, A., Y. Takada, H. Kambara, Y. Umemura, H. Ito and K. Kuchitsu, Mass spectroscopic studies of protonation to amino-acid molecules in atmospheric pressure spray	204 (1993) 152
Hirao, K., State-specific multireference Møller-Plesset perturbation treatment for singlet and triplet excited states, ionized states and electron attached states of H_2O	201 (1993) 59
Hirao, K., see S. Yamamoto	204 (1993) 315
Hiraoka, K., S. Fujimaki, K. Aruga and S. Yamabe, Proton-held dimer and trimer of carbon disulfide	202 (1993) 167
Hiraoka, K., T. Mori and S. Yamabe, The gas-phase solvation of C_2H_5^+ , $s\text{-C}_3\text{H}_7^+$, and $s\text{-C}_4\text{H}_9^+$ with CH_4 . The isomeric structures of C_2H_5^+ and $\text{C}_2\text{H}_5^+ \dots \text{CH}_4$	207 (1993) 178
Hiraoka, K., S. Fujimaki, K. Aruga and S. Yamabe, Bond strengths of the gas-phase cluster ions $\text{X}^-(\text{CS}_2)_n$ ($\text{X}=\text{F}, \text{Cl}, \text{Br}$ and I)	208 (1993) 491
Hirata, F., see M. Irisa	207 (1993) 430
Hirata, Y., T. Okada and T. Nomoto, Higher excited singlet state of diphenylacetylene in solution phase	209 (1993) 397
Hiroike, E. and Y. Fujimura, Dephasing effects on ultrafast transient hole-burning of non-polar solute and solvent molecules	201 (1993) 437
Hirokawa, J., see M. Ichihashi	204 (1993) 219
Hirosawa, I., see K. Tanigaki	203 (1993) 33
Hirosawa, I., see M. Kosaka	203 (1993) 429
Hirose, C., see J. Kubota	204 (1993) 273
Hirota, F., M. Tanimoto and H. Tokiwa, Ab initio study on the AlOH/HALO system	208 (1993) 115
Hishikawa, A., see L.-E. Berg	209 (1993) 47
Hiura, H., T.W. Ebbesen, K. Tanigaki and H. Takahashi, Raman studies of carbon nanotubes	202 (1993) 509
Hiura, H., see T.W. Ebbesen	209 (1993) 83
Hiyama, M. and S. Iwata, Assignment of the photoelectron spectrum of HCl above 20 eV	210 (1993) 187
Hlaváčová, J. and P. Ševčík, Concentration fluctuations and the simulation of stirring effects in the Belousov-Zhabotinskii reaction	201 (1993) 242
Hliwa, M., see A. Selmani	201 (1993) 416
Ho, H., see W. Ren	201 (1993) 247
Ho, J.-J., see S.-L. Lee	207 (1993) 220
Ho, K.M., see X.Q. Wang	207 (1993) 349
Hobbs, R.H., see H.H. Michels	207 (1993) 389
Hobley, J., see D.J. McGarvey	202 (1993) 528
Hobza, P., R. Zahradník and D. Smith, Reactions between H_3^+ and rare gas atoms	208 (1993) 497
Hochstrasser, R.M., see D. Raftery	201 (1993) 513
Hochstrasser, R.M., see C. Galli	206 (1993) 493
Hock, K.M., see L. Šiller	210 (1993) 15
Hoffman, D.K., see D.J. Kouri	203 (1993) 166
Hoffman, D.K., see Y. Huang	206 (1993) 96

- Hoffman, D.K., see X. Ma 208 (1993) 207
- Hoffmann, M.R., Third-order complete active space self-consistent field based generalized Van Vleck perturbation theory 210 (1993) 193
- Hoffmeyer, R.E., A.J. Thakkar, H. Wei and T. Carrington Jr., Vibrational effects on cross sections for elastic scattering of X-rays and fast electrons by H₂O molecules 207 (1993) 407
- Hogervorst, W., see P.F. Levelt 210 (1993) 307
- Hogreve, H., see J. Ackermann 202 (1993) 23
- Holl, N., P. Emele, H. Port, H.C. Wolf, H. Strobel, T. Kesmarszky and F. Effenberger, Lowest excited singlet states of α -9-anthrylpolyenes 205 (1993) 25
- Höllwarth, A., see A.W. Ehlers 208 (1993) 111
- Höllwarth, A., M. Böhme, S. Dapprich, A.W. Ehlers, A. Gobbi, V. Jonas, K.F. Köhler, R. Stegmann, A. Veldkamp and G. Frenking, A set of d-polarization functions for pseudo-potential basis sets of the main group elements Al-Bi and f-type polarization functions for Zn, Cd, Hg 208 (1993) 237
- Holmes, A.B., see A.R. Brown 210 (1993) 61
- Holovko, M. and J.P. Badiali, Effect of an association potential on percolation. Applications to reverse micelles containing proteins 204 (1993) 511
- Homann, K., see R.M. Jaeger 203 (1993) 41
- Hong, Q., J. Durrant, G. Hastings, G. Porter and D.R. Klug, Sub-picosecond oscillatory phenomena in silica glasses 202 (1993) 183
- Hönle, W., see H.J. Byrne 204 (1993) 461
- Honma, K., see Y. Naitoh 205 (1993) 423
- Hore, P.J., see G. Zwanenburg 203 (1993) 65
- Horie, K., see N. Murase 209 (1993) 42
- Hornos, J., see E.S. Bernardes 203 (1993) 143
- Hornos, Y.M., see E.S. Bernardes 203 (1993) 143
- Horsewill, A.J., see S. Clough 208 (1993) 143
- Höser, S., see F.P. Capetanakis 206 (1993) 361
- Höser, S., F.P. Capetanakis, Ch. Kassner and F. Stuhl, Temperature-dependent kinetics of the quenching of O(¹S) by simple alkanes, C₂H₂ and C₂H₄ 208 (1993) 399
- Hosoya, H., see K. Watanabe 209 (1993) 109
- Hou, H., C. Luo, Z. Liu, D. Mao, Q. Qin, Z. Lian, S. Yao, W. Wang, J. Zhang and N. Lin, Generation of the C₆₀ radical cation via electron transfer reaction. A pulse radiolysis study 203 (1993) 555
- Houston, P.L., see G. Nan 209 (1993) 383
- Hovingh, W.J. and R. Parson, Partial cross sections in the predissociation of quasibound states of NeHF. An adiabatic channel interpretation 204 (1993) 369
- Howard, J.A., EPR, FTIR, and FAB mass spectrometric investigation of reaction of H atoms with C₆₀ in a cyclohexane matrix 203 (1993) 540
- Howard, J.A., H.A. Joly, R. Jones, P.P. Edwards, R.J. Singer and D.E. Logan, The observation of pseudorotating lithium and potassium clusters Li₅ and K₇ in an adamantane matrix 204 (1993) 128
- Howard, S.L., Low-energy threshold of the fine-structure transition in rare-gas charge transfer, Chem. Phys. Letters 181 (1991) 298. Erratum 201 (1993) 574
- Hrušák, J., see F. Grandinetti 204 (1993) 53
- Hrušák, J. and H. Schwarz, Ab initio MO calculations on the electronic and geometric structure of fullerene dications, C₆₀²⁺, and the double-ionization energy of C₆₀ 205 (1993) 187

Master index to volumes 201-210

Hsu, M.T., see G. von Helden	204 (1993) 15
Hu, H., see Y. Yue	208 (1993) 311
Hu, P., see A. Wander	201 (1993) 393
Huang, M.-B., see F.-Q. Xie	203 (1993) 598
Huang, R., see L. Zheng	204 (1993) 571
Huang, Y., W. Zhu, D.J. Kouri and D.K. Hoffman, A general time-to-energy transform of wavepackets. Time-independent wavepacket-Schrödinger and wavepacket-Lippmann-Schwinger equations	206 (1993) 96
Huber, J.R., see G. Baum	203 (1993) 261
Huber, J.R., see P. Felder	204 (1993) 248
Huber, J.R., see E. Kades	209 (1993) 275
Huber, J.R., see Th. Walther	209 (1993) 455
Hudson, B.S., see J. Berryhill	205 (1993) 39
Huels, M.A., L. Parenteau and L. Sanche, Quenching of the dissociative electron attachment resonances of O ₂ physisorbed on amorphous ice	210 (1993) 340
Hughes, S.R. and U. Kaldor, The coupled-cluster method with full inclusion of single, double and triple excitations applied to high sectors of the Fock space	204 (1993) 339
Hughes Jr., R.S., see J.E. Davis	207 (1993) 540
Hühn, M.M., see R. Tarroni	207 (1993) 195
Huie, R.E. and C.L. Clifton, Kinetics of the self-reaction of hydroxymethylperoxyl radicals	205 (1993) 163
Huiszoon, C. and W.J. Briels, The static dipole polarizabilities of helium and molecular hydrogen by differential diffusion Monte Carlo	203 (1993) 49
Hummel, A., see W.M. Bartczak	208 (1993) 232
Hunter, J.A., see H. Lin	210 (1993) 38
Hunziker, L., see M. Morgen	209 (1993) 1
Hurley, M.D., see T.J. Wallington	205 (1993) 62
Hush, N.S., see J. Zeng	206 (1993) 318, 323
Hussain, Z., see Y. Zheng	206 (1993) 161
Hüttner, W., see D.A. Ramsay	202 (1993) 406
Hwang, S.M., M.J. Rabinowitz and W.C. Gardiner Jr., Recombination of methyl radicals at high temperatures	205 (1993) 157
Hynes, J.T., see A. Staib	204 (1993) 197

- Iachello, F. and S. Oss, Algebraic model of bending vibrations of complex molecules 205 (1993) 285
 Iachello, F., see D. Bassi 207 (1993) 167
 Iannone, M., see D. Raftery 201 (1993) 513
 Ibberson, R.M., see R.G. Delaplane 201 (1993) 75
 Ibuki, K., see T. Nakayama 209 (1993) 367
 Ichihashi, M., J. Hirokawa, S. Nonose, T. Nagata and T. Kondow, Collision-induced reaction of Ar_n^+ with Kr 204 (1993) 219
 Ichihashi, T., see P.M. Ajayan 202 (1993) 384
 Ichimura, K. and T. Kobayashi, Identification and separation of spectral change due to temperature increase in nanosecond transient absorption spectra of polydiacetylene thin films 202 (1993) 65
 Iguro, T., see H. Ohoyama 209 (1993) 361
 Iida, M., see R. Ikeda 210 (1993) 78
 Iijima, S., see P.M. Ajayan 202 (1993) 384
 Ikeda, R., M. Iida, T. Asaji, A. Ghosh and M. Yamashita, One-dimensional spin dynamics in a halogen-bridged mixed-valence palladium(II), (IV) complex studied by ^1H NMR 210 (1993) 78
 Ikegami, Y., see A. Katsuki 209 (1993) 258
 Ikehira, H., see Z. Yoshida 201 (1993) 481
 Ikejiri, F., see H. Miyasaka 202 (1993) 419
 Ikuta, S., see K. Aoki 202 (1993) 33; 209 (1993) 211
 Ikuta, S., see H. Fueno 204 (1993) 320
 Illenberger, E., see T. Jaffke 203 (1993) 21
 Illenberger, E., see M. Meinke 205 (1993) 213
 Imashiro, F., see D. Kuwahara 204 (1993) 533
 Imre, D.G., see A. García-Vela 202 (1993) 473
 Inaba, R., see H. Okamoto 202 (1993) 161; 206 (1993) 388
 Inagaki, M., see Y. Saito 204 (1993) 277
 Inoue, K. and H. Iwamura, Magnetic properties of the crystals of *p*-(1-oxyl-3-oxido-4,4,5,5-tetramethyl-2-imidazolin-2-yl)benzoic acid and its alkali metal salts 207 (1993) 551
 Inukai, J., see I. Oda 203 (1993) 99
 Ioannidis, A., M.F. Lawrence, H. Kassi, R. Coté, J.P. Dodelet and R.M. Leblanc, Field dependence of hole mobilities in chloro-aluminum phthalocyanine 205 (1993) 46
 Iraqi, M. and H. Schwarz, Gas-phase generation and characterization of linear silicon carbon hydrides SiC_xH^- ($x=4, 6$) by neutralization-reionization mass spectrometry 205 (1993) 183
 Irida, M., K. Nagayama and F. Hirata, Extended scaled particle theory for dilute solutions of arbitrary shaped solutes. An application to solvation free energies of hydrocarbons 207 (1993) 430
 Ishigaki, M., see N. Mikami 202 (1993) 431
 Ishikawa, H. and O. Kajimoto, Formation and decay of SiC_2 radicals on the 193 nm photolysis of phenylsilane 204 (1993) 567
 Ishikawa, M., see L.P. Le 206 (1993) 405
 Ishikawa, N. and Y. Kaizu, Biradical state in phthalocyanine (2+2) tetramer composed of two bis(phthalocyaninato)lutetium radicals 203 (1993) 472
 Ishikawa, S., see A. Tachibana 201 (1993) 315
 Ishikawa, Y., see G.L. Malli 201 (1993) 37
 Ishikawa, Y., see A.B.F. Da Silva 203 (1993) 201
 Ishiwata, N., see H. Murai 203 (1993) 482
 Itagaki, H. and I. Takahashi, Reversible gelation process of isotactic polystyrene revealed by fluorescence measurements 205 (1993) 446

Master index to volumes 201-210

Itaya, A., see H. Sakai	208 (1993) 283
Itikawa, Y., see Y. Okamoto	203 (1993) 61
Ito, A., see K. Yoshizawa	202 (1993) 483
Ito, F., see T. Nakanaga	206 (1993) 73
Ito, H., see A. Hirabayashi	204 (1993) 152
Ito, H., K. Suzuki, T. Kondow and K. Kuchitsu, An analysis of the $B^2\Sigma^+-X^2\Sigma^+$ emission of SiN. Dependence of the electronic transition moment on the Si-N internuclear distance	208 (1993) 328
Ito, M., see I. Oda	203 (1993) 99
Ito, M., see Y. Nakagawa	208 (1993) 453
Ito, Y., see K. Yamasaki	204 (1993) 106
Iu, K.-K., see X. Liu	204 (1993) 163
Ivanecky III, J.E. and J.C. Wright, An investigation of the origins and efficiencies of higher-order nonlinear spectroscopic processes	206 (1993) 437
Iwamura, H., see K. Inoue	207 (1993) 551
Iwata, A., N. Nakashima, M. Kusaba, Y. Izawa and C. Yamanaka, Quantum yields of hydrated electrons by UV laser irradiation	207 (1993) 137
Iwata, K., see H. Hamaguchi	208 (1993) 465
Iwata, K., W.L. Weaver and T.L. Gustafson, Time dependence of the depolarization ratio in picosecond time-resolved Raman spectroscopy. Effect of reorientation	210 (1993) 50
Iwata, S., see M. Hiyama	210 (1993) 187
Izawa, Y., see A. Iwata	207 (1993) 137
Izuoka, A., see T. Mochida	210 (1993) 389

- Jackowski, K., see A. Barszczewicz 203 (1993) 404
- Jacobs, W.P.J.H., J.H.M.C. van Wolput and R.A. van Santen, Infrared spectroscopic study of the bending modes of the Brønsted acidic sites in deuterated zeolites 210 (1993) 32
- Jaeger, R.M., K. Homann, H. Kuhlenbeck and H.-J. Freund, Lifetimes of electronically excited states of molecules on oxide versus metal surfaces 203 (1993) 41
- Jaffke, T., R. Hashemi, L.G. Christophorou, E. Illenberger, H. Baumgärtel and L.A. Pinnaduwege, Photoenhanced dissociative electron attachment to SO₂ 203 (1993) 21
- Jakob, P., see K. Raghavachari 206 (1993) 156
- Jakobi, M., see J. Fulara 206 (1993) 203
- Jamnik, A. and D. Bratko, Structure of Baxter's adhesive fluid in a planar gap 203 (1993) 465
- Janke, W. and T. Sauer, Path integral Monte Carlo using multigrid techniques 201 (1993) 499
- Jankowiak, R. and G.J. Small, Origin of the $T^{1.3}$ power law of pure dephasing for impurity electronic transitions in amorphous solids 207 (1993) 436
- Jankowski, K. and P. Malinowski, Application of the complete-model-space MR-CCSD theory to the $2s^2\ ^1S$ and $2p^2\ ^1S$ states of Be 205 (1993) 471
- Janssen, M.H.M., see C.A. Taatjes 203 (1993) 363
- Jaqué, F., see J.F.H. Nicholls 202 (1993) 560
- Jaqué, F., see T.P.J. Han 208 (1993) 63
- Jaqué, J., see J.F.H. Nicholls 207 (1993) 575
- Jastrzębski, W. and P. Kowalczyk, Polarization labelling spectroscopy of $3\ ^1\Pi_u \leftarrow X\ ^1\Sigma_g^+$ and $3\ ^1\Sigma_u^+ \leftarrow X\ ^1\Sigma_g^+$ transitions in K₂ 206 (1993) 69
- Jaszuński, M., see A. Barszczewicz 203 (1993) 404
- Jaszunski, M., K.L. Bak, P. Jørgensen, T. Helgaker, K. Ruud and H.J.Aa. Jensen, Nuclear magnetic shielding tensor for the ethylenic carbon atom in tetrachlorocyclopropene 204 (1993) 608
- Javahery, G., H. Wincel, S. Petrie and D.K. Bohme, Charge-transfer reactions of C₆₀³⁺: "bracketing" the third ionization energy of C₆₀ 204 (1993) 467
- Jayaraman, D., see F.J. Kumar 206 (1993) 415
- Jayatilaka, D., see T.J. Lee 201 (1993) 1
- Jeevarajan, A.S., see L. Piekara-Sady 207 (1993) 173
- Jeevarajan, A.S., L.D. Kispert and L. Piekara-Sady, An ENDOR study of carotenoid cation radicals on silica-alumina solid supports 209 (1993) 269
- Jemmis, E.D., see G. Subramanian 204 (1993) 393
- Jennings, B.R., see N.J. Harrison 210 (1993) 393
- Jensen, F. and H. Toftlund, Structure and stability of C₂₄ and B₁₂N₁₂ isomers 201 (1993) 89
- Jensen, F., The stability of cage and ring isomers for carbon and boron nitride clusters 209 (1993) 417
- Jensen, H.J.Aa., see M. Jaszunski 204 (1993) 608
- Jensen, H.J.Aa., see O. Vahtras 209 (1993) 201
- Jensen, J.L., see L.A. Burke 206 (1993) 293
- Jensen, J.O., see L.A. Burke 206 (1993) 293
- Jensen, M.H., see J.M. Hammerstad-Pedersen 205 (1993) 591
- Jeung, G.-H., see T. Leininger 205 (1993) 301
- Jia, Y., see M. Du 201 (1993) 535
- Jiang, X.-P. and P. Brumer, A useful measure of quantum state impurity 208 (1993) 179
- Jiang, Y., see G.-Y. Li 202 (1993) 82
- Jiang, Y.S., see J. Liu 210 (1993) 149
- Jin, S.M., see E. Shin 209 (1993) 427
- Jishi, R.A., M.S. Dresselhaus, G. Dresselhaus, K.-A. Wang, P. Zhou, A.M. Rao and P.C. Eklund, Vibrational mode frequencies in C₇₀ 206 (1993) 187

- Jishi, R.A., L. Venkataraman, M.S. Dresselhaus and G. Dresselhaus, Phonon modes in carbon nanotubes 209 (1993) 77
- Jodkowski, J.T., E. Ratajczak, A. Sillesen and P. Pagsberg, Kinetics of the addition reaction of methyl radicals with nitric oxide studied by pulse radiolysis combined with infrared diode laser spectroscopy 203 (1993) 490
- Jodkowski, J.T., see K. Fagerström 204 (1993) 226; 208 (1993) 321
- Joers, J.M., see J.H. Walton 203 (1993) 237
- Johnson, B.G., see M.J. Frisch 206 (1993) 225
- Johnson, B.G., P.M.W. Gill and J.A. Pople, The efficient transformation of (*m0|n0*) to (*ab|cd*) two-electron repulsion integrals 206 (1993) 229
- Johnson, B.G., P.M.W. Gill, J.A. Pople and D.J. Fox, Computing molecular electrostatic potentials with the PRISM algorithm 206 (1993) 239
- Johnson, B.G., see P.M.W. Gill 209 (1993) 506
- Johnson, C.K., see C. Wan 210 (1993) 94
- Johnson, M.A., see T. Tsukuda 201 (1993) 351
- Johnson, M.L., see J.R. Lakowicz 206 (1993) 455
- Johnson, M.R., see S. Clough 208 (1993) 143
- Johnson, R.D., see H.C. Dorn 203 (1993) 549
- Joly, H.A., see J.A. Howard 204 (1993) 128
- Jonas, J., see P. Koziol 201 (1993) 383
- Jonas, V., see A.W. Ehlers 208 (1993) 111
- Jonas, V., see A. Höllwarth 208 (1993) 237
- Jonas, V. and G. Frenking, The molecular structure of phosphabenzene. A theoretically predicted correction to the experimentally determined C–C bond lengths 210 (1993) 211
- Jones, A.B., see C.A. Woodward 206 (1993) 49
- Jones, R., see J.A. Howard 204 (1993) 128
- Jonker, S.A., see J.M. Warman 210 (1993) 397
- Joppien, M., see R. Karnbach 203 (1993) 248
- Jørgensen, P., see Y. Luo 204 (1993) 587; 205 (1993) 555; 207 (1993) 190; 209 (1993) 513
- Jørgensen, P., see M. Jaszunski 204 (1993) 608
- Jørgensen, P., see O. Christiansen 207 (1993) 367
- Jørgensen, P., see O. Vahtras 209 (1993) 201
- Jortner, J., see U. Even 202 (1993) 303
- Jortner, J., see J.E. Combariza 203 (1993) 423
- Jortner, J., M. Bixon, B. Wegewijs, J.W. Verhoeven and R.P.H. Rettschnick, Long-range, photoinduced charge separation in solvent-free donor–bridge–acceptor molecules 205 (1993) 451
- Joslin, C.G., J. Yang, C.G. Gray, S. Goldman and J.D. Poll, Infrared rotation and vibration–rotation bands of endohedral fullerene complexes. Absorption spectrum of Li⁺@C₆₀ in the range 1–1000 cm 208 (1993) 86
- Joslin, E., see H. Yu 203 (1993) 515
- Ju, Q., see X. Wang 208 (1993) 290
- Jug, K. and G. Geudtner, Binding energies and bond distances of ion crystal clusters 208 (1993) 537
- Juha, L., J. Krása and L. Láská, Near-infrared laser-induced ion desorption from ion exchangers into water 204 (1993) 265
- Jumas, J.-C., see M. Womes 201 (1993) 555
- Jundt, C., G. Klein and J. Le Moigne, Yields of triplet exciton pairs in polydiacetylene films 203 (1993) 37
- Jungen, M., see R. Rüede 203 (1993) 477

Kaatze, U., Dielectric relaxation of H ₂ O/D ₂ O mixtures	203 (1993) 1
Kachanov, A.A., see M.G. Bryukov	208 (1993) 392
Kaczmarek, Ł., see K. Kownacki	210 (1993) 373
Kades, E., M. Rösslein and J.R. Huber, Photofragment yield spectra of methyl nitrite in a supersonic jet	209 (1993) 275
Kaino, T., see N. Ooba	207 (1993) 468
Kaizu, Y., see N. Ishikawa	203 (1993) 472
Kajii, Y., K. Takeda and K. Shibuya, Photochemical reaction of C ₆₀ in the presence of triethylamine in toluene	204 (1993) 283
Kajikawa, K., H. Takezoe and A. Fukuda, Orientational structure of noncentrosymmetric domain of merocyanine J-aggregates studied by surface second-harmonic generation	205 (1993) 225
Kajimoto, O., see H. Ishikawa	204 (1993) 567
Kajimoto, O., see Y. Naitoh	205 (1993) 423
Kajimoto, O., see S. Akimoto	209 (1993) 263
Kajimoto, O., T. Nayuki and T. Kobayashi, Picosecond dynamics of the twisted intramolecular charge-transfer state formation of 4-(N,N-dimethylamino)benzonitrile (DMABN) in supercritical fluid solvent	209 (1993) 357
Kakuta, A., see H.S. Nalwa	203 (1993) 109
Kaldor, U., see S.R. Hughes	204 (1993) 339
Kalnins, K., R. Gadonas, V. Krasauskas and A. Pugzhlys, Thermal and photo-stimulated hydrogen atom transfer in quinhydrones	209 (1993) 63
Kalyanaraman, C. and N. Sathyamurthy, Channel control in a chemical reaction. Vibrational enhancement of I [*] /I branching ratio in HI photodissociation	209 (1993) 52
Kamada, K., K. Sasaki, H. Misawa, N. Kitamura and H. Masuhara, Picosecond lasing dynamics of a single dye-doped microparticle in solution	210 (1993) 89
Kamarás, K., V.G. Hadjiev, C. Thomsen, S. Pekker, K. Fodor-Csorba, G. Faigel and M. Tegze, Infrared and Raman spectra of C ₆₀ · <i>n</i> -pentane clathrate crystals	202 (1993) 325
Kamasa-Quashie, A.K., see J.H. Walton	203 (1993) 237
Kamat, P.V., see U. Stafford	205 (1993) 55
Kambara, H., see A. Hirabayashi	204 (1993) 152
Kameyama, T., see Y. Watanabe	206 (1993) 62
Kameyama, T., see Y. Koyama	208 (1993) 479
Kaneko, Y., see N. Watanabe	207 (1993) 493
Kang, S.-H., see X.-G. Peng	209 (1993) 233
Kanik, I., M. Ratliff and S. Trajmar, Electron-impact excitation of the B ¹ Σ ⁺ , C ¹ Σ ⁺ and E ¹ Π states of CO at 100 eV	208 (1993) 341
Kanno, H. and Y. Maeyama, Anomalous behavior of the glass transition temperature for a mixture of alcohol and aqueous LiCl solution	210 (1993) 107
Kappes, M.M., see U. Schneider	210 (1993) 165
Kapuy, E., see Z. Palágyi	203 (1993) 195
Karawajczyk, A., see L.-E. Berg	209 (1993) 47
Karnbach, R., M.C. Castex, J.W. Keto, M. Joppien, J. Wörmer, G. Zimmerer and T. Möller, Excited state dynamics of Kr _{<i>N</i>} clusters probed with time- and energy-resolved photoluminescence methods	203 (1993) 248
Karolczak, J. and D.J. Clouthier, Pyrolysis jet spectroscopy of dichlorosilylene	201 (1993) 409
Kasai, T., see H. Ohoyama	209 (1993) 361
Kashiwagi, H., see S. Yamamoto	205 (1993) 306

Kassi, H., see A. Ioannidis	205 (1993) 46
Kassner, Ch., P. Heinrich, F. Stuhl, S. Couris and S. Haritakis, Fragments in the UV photolysis of the CH_3 and CH_3O_2 radicals	208 (1993) 27
Kassner, Ch., see S. Höser	208 (1993) 399
Kasuya, A., see Y. Saito	209 (1993) 72
Kato, T., see S. Nagase	201 (1993) 475
Kato, T., T. Kodama and T. Shida, Spectroscopic studies of the radical anion of C_{60} . Detection of the fluorescence and reinvestigation of the ESR spectrum	205 (1993) 405
Katoh, R. and M. Kotani, Observation of fluorescence from higher excited states in an anthracene crystal	201 (1993) 141
Katoh, T., see M. Mimuro	204 (1993) 101
Katscher, U., R. Schmidt and H.-D. Brauer, Triplet-sensitized cycloreversion of endoperoxides of aromatic compounds. An adiabatic reaction route	205 (1993) 75
Katsuki, A., S. Tero-Kubota and Y. Ikegami, CIDEP study on the photosensitized reactions of <i>p</i> -benzoquinone and hydroquinone by eosin Y	209 (1993) 258
Kawasaki, K., see J. Takahashi	209 (1993) 479
Kawashima, H. and T. Shida, Multiple-pulse excitation of molecular vibration in resonant pump-probe experiments. Irradiation of π pulses	207 (1993) 257
Kawata, S., see H. Sakai	208 (1993) 283
Kazarian, S.G., see A.I. Cooper	206 (1993) 175
Kazarinov, V.E., see A.D. Modestov	206 (1993) 401
Keil, M., see L.J. Rawluk	202 (1993) 291
Keita, B., see R. Céolin	208 (1993) 259
Keith, T.A. and R.F.W. Bader, Calculation of magnetic response properties using a continuous set of gauge transformations	210 (1993) 223
Kelly, C., J. Treacy, H.W. Sidebottom and O.J. Nielsen, Rate constants for the reaction of CF_3O radicals with hydrocarbons at 298 K	207 (1993) 498
Kelly, H.M., see P.W. Fowler	203 (1993) 189
Kelly, H.M. and P.W. Fowler, Quadrupole moments, magnetisabilities and rotational <i>g</i> factors for first- and second-row hydrides	206 (1993) 568
Kelly, P.B., see J.D. Getty	201 (1993) 236
Kelly, P.B., see C.C. Bonang	209 (1993) 35
Kelly, S., see L.-E. Berg	209 (1993) 47
Kemper, P.R., see G. von Helden	204 (1993) 15
Keren, A., see L.P. Le	206 (1993) 405
Kerr, J.A., The heat of formation of the CF_3CO radical: a note of caution	201 (1993) 391
Keshavamurthy, S. and W.H. Miller, A semiclassical model to incorporate multidimensional tunneling in classical trajectory simulations using locally conserved actions	205 (1993) 96
Kesmarszky, T., see N. Holl	205 (1993) 25
Kestner, N.R., see J.E. Combariza	203 (1993) 423
Keto, J.W., see R. Karnbach	203 (1993) 248
Khanna, S.N. and F. Reuse, Hydrogen absorption around neutral and charged Ni atoms	205 (1993) 248
Khanna, S.N., see B.V. Reddy	209 (1993) 104
Kharkats, Y.I., see J.M. Hammerstad-Pedersen	205 (1993) 591
Khmelniski, I.V., see M. Sikorski	209 (1993) 403
Kiefer, W., see M. Ganz	207 (1993) 110
Kiefer, W., see K. Kneipp	207 (1993) 450

Kikas, J., P. Schellenberg and J. Friedrich, Temperature broadening of impurity transitions in the crystalline and glassy phase of benzophenone	207 (1993) 143
Kikuchi, K., see T. Wakabayashi	201 (1993) 470
Kim, B. and K. Yoshihara, Determination of adiabatic ionization potentials of Cs ₂ and Cs ₃ in a very cold molecular beam using time-of-flight mass spectrometry	202 (1993) 437
Kim, B. and K. Yoshihara, Triplet-triplet transition of Cs ₂ studied by multiphoton ionization spectroscopy in a very cold pulsed molecular beam	204 (1993) 407
Kim, D., see E. Shin	209 (1993) 427
Kim, M.S., see I.C. Yeh	207 (1993) 487
Kim, S.K., see E. Shin	209 (1993) 427
Kim, W.-H., M. McPhillen, J.M. Hayes and G.J. Small, A new methodology for production of hyperquenched glassy films and their study by nonphotochemical hole burning	207 (1993) 443
Kim, Y.H., see I.C. Yeh	207 (1993) 487
King, D.A., see A. Wander	201 (1993) 393
King, D.A., see L.D. Mapledoram	208 (1993) 409
King, D.A., see H.E. Dastoor	209 (1993) 493
King, J.C., see B.J. Schwartz	203 (1993) 503
King, P.M., R.M. Spycher and W.F. van Gunsteren, Structure elucidation from rotation spectra: a penalty function approach	203 (1993) 88
Kinoshita, M., see L.P. Le	206 (1993) 405
Kinsey, J.L., see F. Remacle	205 (1993) 267
Kirillov, S.A., Markovian frequency modulation in liquids. Analytical description and comparison with the stretched exponential approach	202 (1993) 459
Kishimoto, Y., see M. Sakurai	208 (1993) 425
Kispert, L.D., see L. Piekara-Sady	207 (1993) 173
Kispert, L.D., see A.S. Jeevarajan	209 (1993) 269
Kitamura, N., see K. Kamada	210 (1993) 89
Klein, G., see C. Jundt	203 (1993) 37
Kleinhesselink, D. and M. Wolfsberg, Application of the MUSIC method for spectral estimation to a model system	205 (1993) 461
Klokishner, S.I., see B.S. Tsukerblat	203 (1993) 55
Klug, D.R., see Q. Hong	202 (1993) 183
Kneipp, K., E. Roth, C. Engert and W. Kiefer, Near-infrared excited surface-enhanced Raman spectroscopy of rhodamine 6G on colloidal silver	207 (1993) 450
Knight Jr., L.B., B. Gregory, J. Cleveland and C.A. Arrington, Laser vaporization generation of HAlOH, DAlOD and HAl ¹⁷ OH for neon and argon matrix isolation electron spin resonance investigations. Comparison with theoretical calculations	204 (1993) 168
Knight Jr., L.B., see J.R. Morton	204 (1993) 481
Knöckel, H., M. Renger and E. Tiemann, UV multiphoton dissociation of SbBr ₃	208 (1993) 10
Knoester, J., Third-order optical response of molecular aggregates. Disorder and the breakdown of size-enhancement	203 (1993) 371
Knor, Z., Atomic-like states at atoms on transition metal surfaces	201 (1993) 97
Knuts, S., see Y. Luo	209 (1993) 513
Kobayashi, F., see A. Osuka	201 (1993) 223
Kobayashi, K., see S. Nagase	201 (1993) 475
Kobayashi, N., W.A. Nevin, S. Mizunuma, H. Awaji and M. Yamaguchi, Ring-expanded porphyrins as an approach towards highly conductive molecular semiconductors	205 (1993) 51

Kobayashi, N., see N. Watanabe	207 (1993) 493
Kobayashi, T., see K. Ichimura	202 (1993) 65
Kobayashi, T., see M. Yoshizawa	207 (1993) 461
Kobayashi, T., see A. Yasuda	209 (1993) 281, 531
Kobayashi, T., see O. Kajimoto	209 (1993) 357
Kobayashi, T., see H. Ooi	210 (1993) 384
Kobus, J., Finite-difference versus finite-element methods	202 (1993) 7
Koch, W., G. Frenking and A. Gobbi, The electronic ground state of the NeAr^{2+} dication. A complete active space SCF/multi-reference CI study	203 (1993) 205
Kochanski, G.P., see R.C. Haddon	203 (1993) 433
Kochur, A.G., S.A. Novikov and V.L. Sukhorukov, Method of calculation of molecular Auger spectra based on one-centre decomposition of MO LCAO	208 (1993) 541
Kochur, A.G., see S.A. Novikov	208 (1993) 545
Kodama, T., see T. Kato	205 (1993) 405
Koedijk, J.M.A., see R. Wannemacher	206 (1993) 1
Koga, N. and K. Morokuma, Ab initio MO calculation of $(\eta^2\text{-C}_{60})\text{Pt}(\text{PH}_3)_2$. Electronic structure and interaction between C_{60} and Pt	202 (1993) 330
Köhler, K.F., see A.W. Ehlers	208 (1993) 111
Köhler, K.F., see A. Höllwarth	208 (1993) 237
Kohn, W., Density functional/Wannier function theory for systems of very many atoms	208 (1993) 167
Kohtani, S., A. Kudo and T. Sakata, Spectral sensitization of a TiO_2 semiconductor elec- trode by CdS microcrystals and its photoelectrochemical properties	206 (1993) 166
Kolb, D., see S. Hackel	206 (1993) 91
Kolb, D.M., see R. Ullmann	209 (1993) 238
Koma, A., see M. Sakurai	208 (1993) 425
Komornicki, A., see M. Feyereisen	208 (1993) 359
Kondo, J., see J. Kubota	204 (1993) 273
Kondow, T., see T. Tsukuda	201 (1993) 351
Kondow, T., see M. Ichihashi	204 (1993) 219
Kondow, T., see H. Ito	208 (1993) 328
Kong, F., see N. Zhang	205 (1993) 178
Kong, F., see X. Wang	208 (1993) 290
Kong, W., D. Rodgers and J.W. Hepburn, Formation of highly vibrationally excited states of O_2^+ by threshold pulsed field ionization using coherent XUV	203 (1993) 497
Konings, R.J.M. and J.E. Fearon, The vibration spectra of the diiodides of the first-row transition metals: the infrared spectra of gaseous CaI_2 , MnI_2 and ZnI_2	206 (1993) 57
Konings, R.J.M., A.S. Booij and E.H.P. Cordfunke, The infrared spectrum of gaseous Sb_4O_6	210 (1993) 380
Kono, T., M. Takayanagi, T. Nishiya and I. Hanazaki, Photodissociation of acetaldehyde studied by photofragment excitation spectroscopy in a supersonic free jet	201 (1993) 166
Konrat, R. and H. Sterk, Cross-correlation effects in the transverse relaxation of multiple- quantum transitions of heteronuclear spin systems	203 (1993) 75
Kopf, D., see G.D. Hager	204 (1993) 420
Köppel, H., see R. Meiswinkel	201 (1993) 449
Köppel, H., New ultrafast nonradiative decay mechanism in the benzene radical cation	205 (1993) 361
Koput, J., J.W.G. Seibert and B.P. Winnewisser, The torsional potential energy function of N_2O_4	204 (1993) 183
Korchowiec, J. and P. Kowalski, Charge polarization of molecular systems. Charge sen- sitivity and MNDO study	208 (1993) 135

- Korolev, V.V., see M. Sikorski 209 (1993) 403
- Kosaka, M., K. Tanigaki, I. Hirose, Y. Shimakawa, S. Kuroshima, T.W. Ebbesen, J. Mizuki and Y. Kubo, ESR studies of K-doped C₆₀ 203 (1993) 429
- Koski, W.S., see S. Roszak 208 (1993) 225
- Kosugi, N., see S. Nakagawa 210 (1993) 180
- Kotani, M., see R. Katoh 201 (1993) 141
- Kothe, G., see S.M. Fan 204 (1993) 517
- Kouri, D.J., M. Arnold and D.K. Hoffman, Time-to-energy transform of wavepackets using absorbing potentials. Time-independent wavepacket-Schrödinger and wavepacket-Lippmann-Schwinger equations 203 (1993) 166
- Kouri, D.J., see Y. Huang 206 (1993) 96
- Kouri, D.J., see X. Ma 208 (1993) 207
- Koutecký, J., see V. Bonačić-Koutecký 206 (1993) 528
- Kowalczyk, P., see W. Jastrzębski 206 (1993) 69
- Kowalski, K., Universal formats for nonlinear dynamical systems 209 (1993) 167
- Kowalski, P., see J. Korchowiec 208 (1993) 135
- Kownacki, K., Ł. Kaczmarek and A. Grabowska, Single versus double proton transfer in the photochromic Schiff bases. Electronic spectroscopy and synthesis of model compounds 210 (1993) 373
- Koyama, Y., see Y. Watanabe 206 (1993) 62
- Koyama, Y., Y. Miki, T. Kameyama, R.J. Cogdell and Y. Watanabe, Low-lying electronic levels of spheroidene bound to the light-harvesting (LH2) complex of *Rhodobacter sphaeroides* 2.4.1 as determined by fluorescence and fluorescence-excitation spectroscopy at 170 K 208 (1993) 479
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- Kozlov, V.A. and V.I. Pupyshev, Self-consistent Brueckner theory for molecular orbitals 206 (1993) 151
- Kraka, E., see D. Cremer 209 (1993) 547
- Krása, J., see L. Juha 204 (1993) 265
- Krasauskas, V., see K. Kalnins 209 (1993) 63
- Krasnoperov, L.N., see T.S. Mashnin 207 (1993) 105
- Kręglewski, M., see W. Łodyga 210 (1993) 303
- Krishnan, P.N., see L.A. Burke 206 (1993) 293
- Krishnan, V., see M. Raghavan 205 (1993) 19
- Kroto, H.W., see P.R. Birkett 205 (1993) 399
- Krupyanskii, Yu.F., see I.M. Barkalov 208 (1993) 1
- Krusic, P.J., see J.R. Morton 204 (1993) 481
- Krzysztofowicz, A.M., see C. Szmytkowski 209 (1993) 474
- Kubát, P., T. Vondrák, P. Engst and Z. Zelinger, Pulsed laser photolysis of dirhenium decacarbonyl at 308 nm 205 (1993) 429
- Kubo, Y., see M. Kosaka 203 (1993) 429
- Kubota, J., M. Furuki, Y. Goto, J. Kondo, A. Wada, K. Domen and C. Hirose, Vibrational lifetimes of surface hydroxyl groups of zeolites by picosecond IR pulses 204 (1993) 273
- Kucharski, S.A. and R.J. Bartlett, Coupled-cluster methods correct through sixth order 206 (1993) 574
- Kuchitsu, K., see A. Hirabayashi 204 (1993) 152
- Kuchitsu, K., see H. Ito 208 (1993) 328
- Kudo, A., see S. Kohtani 206 (1993) 166

Kudo, A., see N. Saito	208 (1993) 39
Kuhlenbeck, H., see R.M. Jaeger	203 (1993) 41
Kuhlenbeck, H., see A. Freitag	210 (1993) 10
Kuhn, A., see R. Lapouyade	208 (1993) 48
Kuhn, C., see H. Kuhn	204 (1993) 206
Kuhn, H. and C. Kuhn, Early quantum chemistry of polyenes. Useful stimulus in research on conducting polymers	204 (1993) 206
Kuki, M., see Y. Watanabe	206 (1993) 62
Kumar, A., see R.K. Vatsa	205 (1993) 133; 207 (1993) 75
Kumar, A., R.K. Vatsa, P.D. Naik, K.V.S. Rama Rao and J.P. Mittal, Infrared fluorescence from nascent CO ₂ and COF ₂ photoproducts in IR multiphoton dissociation of trifluoroacetic acid	208 (1993) 385
Kumar, F.J., D. Jayaraman, C. Subramanian and P. Ramasamy, Nucleation kinetics of polar compounds. Effect of curvature and dipole-dipole interaction on surface energy	206 (1993) 415
Kunkely, H. and A. Vogler, Photoluminescence of a triangular Hg ₃ ⁴⁺ cluster	206 (1993) 467
Kunttu, H., see J. Lundell	208 (1993) 247
Kupče, Ě. and R. Freeman, A new method for assigning carbon connectivities by NMR	204 (1993) 524
Kuppermann, A., see Y.-S.M. Wu	201 (1993) 178
Kuppermann, A. and Y.-S.M. Wu, The geometric phase effect shows up in chemical reactions	205 (1993) 577
Kurihara, T., see N. Ooba	207 (1993) 468
Kuroshima, S., see K. Tanigaki	203 (1993) 33
Kuroshima, S., see M. Kosaka	203 (1993) 429
Kurtenbach, R., see K.H. Becker	210 (1993) 135
Kurz, H., see U. Lemmer	203 (1993) 28
Kusaba, M., see A. Iwata	207 (1993) 137
Kuśba, J., see J.R. Lakowicz	206 (1993) 455
Kutzelnigg, W., see C. van Wüllen	205 (1993) 563
Kuwahara, D., F. Imashiro and T. Terao, Dynamics of ferrocene molecules enclathrated in β-cyclodextrin as studied by variable-temperature one-dimensional SASS (switching-angle sample spinning) NMR spectroscopy	204 (1993) 533
Kuwata, K., see H. Murai	203 (1993) 482
Kuwata, K., see H. Ohoyama	209 (1993) 361
Kuznetsov, A.M., see J.M. Hammerstad-Pedersen	205 (1993) 591
Kvapil, J., see Ě.A. Mares	206 (1993) 9
Kwiatkowski, J.S., see J. Leszczyński	201 (1993) 79
Kwiatkowski, J.S. and J. Leszczyński, Temperature-dependent thermodynamic contributions to the relative tautomeric stabilities of nucleic acid bases	204 (1993) 430

- Laasonen, K., M. Parrinello, R. Car, C. Lee and D. Vanderbilt, Structures of small water clusters using gradient-corrected density functional theory 207 (1993) 208
- Labastie, P., see B. Vezin 202 (1993) 209; 206 (1993) 521
- Laganà, A., see G.A. Parker 202 (1993) 75
- Laganà, A., M.L. Hernandez Hernandez, J.M. Alvariño, L. Castro and P. Palmieri, The potential energy surface of the $\text{Na}(3^2\text{S}_{1/2}) + \text{HF}(\text{X } ^1\Sigma^+)$ reaction 202 (1993) 284
- Lakowicz, J.R., J. Kuśba, H. Szmecinski, M.L. Johnson and I. Gryczynski, Distance-dependent fluorescence quenching observed by frequency-domain fluorometry 206 (1993) 455
- Lalitha, P.V., P. Sambasiva Rao and R. Ramaswamy, An EPR study of the Belousov-Zhabotinsky reaction 201 (1993) 559
- Lallement, A., O. Sublemontier, J.-P. Visticot, A.J. Bell, J. Berlande, J. Cuvellier, J.M. Mestdagh and P. Meynadier, Quenching of $\text{Ba}(^1\text{P}_1)$ by CH_4 molecules within argon clusters 204 (1993) 440
- Lamb, R.N., see N. Than-Trong 205 (1993) 219
- Lambert, C., see R.V. Bensasson 201 (1993) 326; 206 (1993) 197
- Lambert, D.K., see J.S. Luo 204 (1993) 445
- Lambert, R.M., see C. Hardacre 206 (1993) 171
- Lammertsma, K., see M.N. Glukhovtsev 209 (1993) 207
- Land, E.J., see R.V. Bensasson 201 (1993) 326; 206 (1993) 197
- Landman, U., see C. Yannouleas 210 (1993) 437
- Langlet, J., see S. Creuzet 208 (1993) 511
- Lapouyade, R., A. Kuhn, J.-F. Letard and W. Rettig, Multiple relaxation pathways in photoexcited dimethylaminonitro- and dimethylaminocyano-stilbenes 208 (1993) 48
- Lara, F., see D.V. Shalashilin 207 (1993) 250
- Larciprete, R., see E. Borsella 203 (1993) 15
- Laria, D. and R. Fernandez-Prini, Ion-pair solvation in aqueous clusters 205 (1993) 260
- Larsson, M., see R.S. Hiemstra 205 (1993) 236
- Lask, G.M., J. Agreiter, R. Schlachta and V.E. Bondybey, Infrared emission and nonradiative relaxation of C_2 in solid neon 205 (1993) 31
- Láska, L., see L. Juha 204 (1993) 265
- Latajka, Z., see C. Mijoule 208 (1993) 364
- Launay, J.M., see S.E. Branchett 208 (1993) 523
- Launay, J.-P., see J.M. Warman 210 (1993) 397
- Laush, C. and J.M. Lisy, The experimental determination of vibrational transition moments for $\text{N}_2\text{-HF}$ and OC-HF 210 (1993) 347
- Lavendy, H., J.M. Robbe and J.P. Flament, MCSCF-CI calculations of the CO^+ ion 205 (1993) 456
- Lavin, A. and S. Collins, The ground-state stabilization of the keto tautomer of 7-hydroxyquinoline in methanol/argon matrices at 10 K 204 (1993) 96
- Lavin, A. and S. Collins, The ground-state stabilization of the keto tautomer of the 7-hydroxyquinoline dimer in argon matrices at 10 K 207 (1993) 513
- Lawler, J.E., see K.L. Menningen 204 (1993) 573
- Lawley, K.P., see R.J. Donovan 205 (1993) 129; 207 (1993) 129
- Lawrence, M.F., see A. Ioannidis 205 (1993) 46
- Lazzaroni, R., see C. Quattrocchi 208 (1993) 120
- Lazzeretti, P., see J. San-Fabian 206 (1993) 253
- Le, L.P., A. Keren, G.M. Luke, W.D. Wu, Y.J. Uemura, M. Tamura, M. Ishikawa and M. Kinoshita, Searching for spontaneous magnetic order in an organic ferromagnet. μSR studies of β -phase p -NPNN 206 (1993) 405

Leach, C.A., see A. Carrington	206 (1993) 77
Leach, S., see R.V. Bensasson	201 (1993) 326; 206 (1993) 197; 210 (1993) 141
Leach, S., see C. Bulliard	209 (1993) 434
Lebeau, B., N. Herlet, J. Livage and C. Sanchez, Optical properties of a near-infrared dye laser incorporated inside sol-gel matrices	206 (1993) 15
Leblanc, R.M., see J.-L. Brousseau	202 (1993) 521
Leblanc, R.M., see A. Ioannidis	205 (1993) 46
LeCours, S.M., see C. Galli	206 (1993) 493
Ledoux, I., see J. Zyss	206 (1993) 409
Lee, C., see K. Laasonen	207 (1993) 208
Lee, C. and D. Vanderbilt, Proton transfer in ice	210 (1993) 279
Lee, H.W.H., see J.E. Davis	207 (1993) 540
Lee, M., see E. Shin	209 (1993) 427
Lee, S.-L., see J.-A. Chen	205 (1993) 80
Lee, S.-L., C.-H. Chu, Y.-L. Luo and J.-J. Ho, Multifractal analysis of diffusion-limited reactions over surfaces of diffusion-limited aggregates	207 (1993) 220
Lee, S.-Y., Derivation of the reflection principle in continuum resonance Raman scattering	203 (1993) 93
Lee, T.J. and D. Jayatilaka, An open-shell restricted Hartree-Fock perturbation theory based on symmetric spin orbitals	201 (1993) 1
Lee, T.J., see G.C. Schatz	202 (1993) 495
Lee, T.J., see J.M.L. Martin	205 (1993) 535
Lee, T.-S., see J.-A. Chen	205 (1993) 80
Lee, Y., D.C. Michaels and L.G. Butler, ^{11}B imaging with field-cycling NMR as a line narrowing technique	206 (1993) 464
Leegwater, J.A. and S. Mukamel, Transient grating spectroscopy of exciton sound waves in dense exciton fluids	203 (1993) 125
Leforestier, C., see M. Menou	210 (1993) 294
Legay, F., see N. Legay-Sommaire	207 (1993) 123
Legay-Sommaire, N. and F. Legay, Photochemistry in Hg doped matrices. Infrared spectra of mercury hydrides: HgH_2 , HgD_2 , HHgD , HgD	207 (1993) 123
Legon, A.C. and D.G. Lister, Van der Waals stretching and bending force constants from the rotational spectrum of argon...1,3,5-trioxane	204 (1993) 139
Legon, A.C., see J.W. Bevan	204 (1993) 551
LeGoues, F.K., see J.R. Heath	208 (1993) 263
Lehr, H. and C.A. Chatzidimitriou-Dreismann, Complex scaling of polynomial potentials	201 (1993) 278
Leininger, T., J.-F. Riehl, G.-H. Jeung and M. Péliissier, Comparison of the widely used HF pseudo-potentials: MH^+ ($\text{M}=\text{Fe}$, Ru , Os)	205 (1993) 301
Le Maire, M., see R. Heidler	209 (1993) 299
Lemire, G.W., see M.J. McQuaid	210 (1993) 350
Lemmer, U., R. Fischer, J. Feldmann, R.F. Mahrt, J. Yang, A. Greiner, H. Bässler, E.O. Göbel, H. Heesel and H. Kurz, Time-resolved studies of two-photon absorption processes in poly(<i>p</i> -phenylenevinylene)s	203 (1993) 28
Lemmer, U., R.F. Mahrt, Y. Wada, A. Greiner, H. Bässler and E.O. Göbel, Picosecond hopping relaxation in conjugated polymers	209 (1993) 243
Le Moigne, J., see C. Jundt	203 (1993) 37
Lennon, D., T.I. Quickenden and C.G. Freeman, UV-excited luminescences from amorphous and polycrystalline H_2O ices	201 (1993) 120

Leone, S.R., see F.X. Campos	201 (1993) 399
Leopold, D.G., see S.M. Casey	201 (1993) 205
Lepetit, M.-B. and J.-P. Malrieu, A self-consistent, non-divergent evaluation of second-order correlation energies	208 (1993) 503
Lermé, J., see B. Baguenard	205 (1993) 13
Lesclaux, R., see I. Bridier	201 (1993) 563
L'Espérance, D. and E.L. Chronister, Rotational dynamics of quinizarin in silicate and aluminosilicate solutions, gels, and glasses	201 (1993) 229
Lester Jr., W.A., see J.W.D.M. Carneiro	202 (1993) 278
Le Sueur, C.R., J.R. Henderson and J. Tennyson, Gateway states and bath states in the vibrational spectrum of H_3^+	206 (1993) 429
Leszczyński, J. and J.S. Kwiatkowski, Molecular structures and vibrational spectra of selenoketene and its thio- and oxo-analogs by second-order Møller-Plesset theory	201 (1993) 79
Leszczyński, J., see J.S. Kwiatkowski	204 (1993) 430
Letard, J.-F., see R. Lapouyade	208 (1993) 48
Letardi, T., see V. Aquilanti	205 (1993) 229
Levelt, P.F., K.S.E. Eikema, S. Stolte, W. Hogervorst and W. Ubachs, XUV-laser excitation of molecular fluorine	210 (1993) 307
Levin, P.P., see V.Ya. Shafirovich	210 (1993) 101
Levine, R.D., see M. Ben-Nun	203 (1993) 450; 210 (1993) 423
Levine, R.D., see F. Remacle	205 (1993) 267; 209 (1993) 315
Levine, R.D., see N. Agmon	206 (1993) 143
Levine, R.D., Surprisal analysis using dressed variables	207 (1993) 265
Levine, R.D., see T.D. Sewell	208 (1993) 125
Levine, R.D., see U. Even	210 (1993) 416
Levitsky, I.A., see Yu.P. Blagoy	203 (1993) 265
Levstein, P.R., see C.A. Steren	204 (1993) 23
Lewenkopf, C., see Y. Wang	205 (1993) 521
Lewerenz, M., B. Schilling and J.P. Toennies, A new scattering deflection method for determining and selecting the sizes of large liquid clusters of 4He	206 (1993) 381
Lezius, M., P. Scheier and T.D. Märk, Free electron attachment to C_{60} and C_{70}	203 (1993) 232
Li, G.-Y., Y. Jiang and X.-W. Wu, Composite pulse excitation for spin-1 pure nuclear quadrupole resonance spectroscopy in powders	202 (1993) 82
Li, G.-Y. and X.-W. Wu, Composite pulse sequences for pure NQR in powders	204 (1993) 529
Li, H., see X. Wang	208 (1993) 290
Li, J., see A. Tang	201 (1993) 465
Li, J., J. Feng and J. Sun, Quantum chemical calculations on the spectra and nonlinear third-order optical susceptibility of C_{60}	203 (1993) 560
Li, L., X.T. Wang, X.N. Li and X.B. Xie, Investigation of the 3d Rydberg state of CS_2 by multiphoton ionization	202 (1993) 115
Li, Q., see A. Tang	201 (1993) 465
Li, R., see W. Zhu	204 (1993) 538
Li, T.-J., see X.-G. Peng	209 (1993) 233
Li, X., see D. Xu	210 (1993) 315
Li, X.N., see L. Li	202 (1993) 115
Li, Y., see B. Zhang	206 (1993) 103
Li, Z., B. Gu and R. Han, Electronic properties of C_{28} and $Hf@C_{28}$ clusters	207 (1993) 41

- Li, Z. and J.S. Francisco, An examination of pathways for the reaction of oxygen atoms with CF₃O radicals. Implications for the role of CF₃ radicals in stratospheric chemical processes 209 (1993) 151
- Li, Z.G., P.J. Fagan and L. Liang, The three-dimensional shape of carbon nanotubes by high-resolution electron microscopy 207 (1993) 148
- Lian, L., F. Akhtar, P.A. Hackett and D.M. Rayner, Reaction of the copper dimer, Cu₂, with ethylene in the gas phase 205 (1993) 487
- Lian, Z., see H. Hou 203 (1993) 555
- Liang, L., see Z.G. Li 207 (1993) 148
- Lianos, P., Calculation of the rate constant for fluorescence quenching in organized molecular assemblies 202 (1993) 471
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- Liegener, C.-M., see G. Endrédi 210 (1993) 477
- Lim, E.C., see T. Chakraborty 207 (1993) 99
- Lin, H., J.A. Hunter and J. Pfab, Laser-induced fluorescence spectroscopy of jet-cooled 2-methylantracene S₁ (π , π^*). Evidence for methyl conformation change upon electronic excitation 210 (1993) 38
- Lin, H.-L., see Y.-F. Cao 207 (1993) 317
- Lin, J., see Y. Zheng 202 (1993) 148
- Lin, N., see H. Hou 203 (1993) 555
- Lin, S.H., see B. Fain 202 (1993) 357; 207 (1993) 287
- Lin, S.H., see R.G. Alden 208 (1993) 350
- Lin, S.H., see J. Grotemeyer 209 (1993) 499
- Lin, Z., see Y. Yue 208 (1993) 311
- Lindgren, S.-Å., C. Svensson and L. Walldén, Submonolayer Na coverage threshold for water vapour adsorption on Cu(111)/Na 205 (1993) 391
- Lindner, J., see S. Becker 208 (1993) 15
- Lineberger, W.C., see M.L. Polak 210 (1993) 55
- Linschitz, H., see C.A. Steren 204 (1993) 23
- Lisini, A., see M. Brosolo 203 (1993) 586
- Lisini, A., M. Brosolo and P. Decleva, Quasidegenerate perturbation theory calculation of excitation spectra. A convergence study on the CH⁺ molecule 209 (1993) 135
- Lister, D.G., see A.C. Legon 204 (1993) 139
- Lisy, J.M., see C. Laush 210 (1993) 347
- Liu, C., see A. Tang 201 (1993) 465
- Liu, F. and A.D. Buckingham, Antisymmetric resonant vibrational Raman scattering 207 (1993) 325
- Liu, J., Y.H. Shao and Y.S. Jiang, Exact solution of graph spectrum of C₆₀ 210 (1993) 149
- Liu, R. and X. Zhou, Structures of PhX (X=O and N). Importance of polarization functions in the basis set 207 (1993) 185
- Liu, X., see J.D. Getty 201 (1993) 236
- Liu, X., K.-K. Iu and J.K. Thomas, Photophysical properties of pyrene in zeolites. Observation of pyrene anion radicals in zeolites X and Y 204 (1993) 163
- Liu, Z., see W. Ren 201 (1993) 247
- Liu, Z., see H. Hou 203 (1993) 555
- Liu, Z.F., G.M. Bancroft, L.L. Coatsworth and K.H. Tan, Fine structure in the inner valence photoelectron spectra of N₂ and CO 203 (1993) 337

- Livage, J., see B. Lebeau 206 (1993) 15
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- Lobach, A.S., see V.A. Nadtochenko 208 (1993) 431
- Lochschmidt, A., see I. Fischer 202 (1993) 542
- Łodyga, W. and M. Kręglewski, Two-dimensional inversion potential function for hydrazine determined from rotation-vibration spectra 210 (1993) 303
- Loew, G.H., see Y.-T. Chang 205 (1993) 543
- Logan, D.E., see J.A. Howard 204 (1993) 128
- Lohr, L.L., see M.R. Savina 205 (1993) 200
- Long, H.W., see C.R. Bowers 205 (1993) 168
- Loock, H.-P., J. Cao and C.X.W. Qian, Vibrational modification of the spatial anisotropy parameter in photodissociation. A classical trajectory study 206 (1993) 422
- Lorquet, J.C., see F. Remacle 209 (1993) 315
- Lösche, M., see S.P. Palto 202 (1993) 308
- Lotshaw, W.T., see D. McMorro 201 (1993) 369
- Lou, N., see D. Xu 210 (1993) 315
- Lou, N.-Q., see K.-L. Han 203 (1993) 509
- Löwdin, P.-O., see I. Mayer 202 (1993) 1
- Lucchese, R.R., see R.F. Meads 206 (1993) 488
- Luchinat, C., see I. Bertini 203 (1993) 445
- Luckhaus, D. and M. Quack, The role of potential anisotropy in the dynamics of the CH chromophore in CHX₃(C_{3v}) symmetric tops 205 (1993) 277
- Luckhurst, G.R., see S.M. Fan 204 (1993) 517
- Ludowise, P., see M. Morgen 209 (1993) 1
- Lugtenburg, J., see H.A. Frank 207 (1993) 88
- Luke, G.M., see L.P. Le 206 (1993) 405
- Luna, A., see M. Esseffar 209 (1993) 557
- Lund, A., see K. Fagerström 204 (1993) 226; 208 (1993) 321
- Lundell, J., J. Nieminen and H. Kunttu, All-electron and effective core potential studies on ground state ArH⁺, KrH⁺ and XeH⁺ ions 208 (1993) 247
- Luntz, A.C., see J.K. Brown 204 (1993) 451
- Luo, C., see H. Hou 203 (1993) 555
- Luo, J.S., R.G. Tobin and D.K. Lambert, Electric field screening in an adsorbed layer: CO on Pt(111) 204 (1993) 445
- Luo, Y., O. Vahtras, H. Ågren and P. Jørgensen, Multiconfigurational quadratic response theory calculations of two-photon electronic transition probabilities of H₂O 204 (1993) 587
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- Luo, Y.-L., see S.-L. Lee 207 (1993) 220
- Luque, J., J. Ruiz and M. Martin, Unequal A-doublet spectral intensities in CH(A ²Δ→X ²Π) emission obtained in the ArF laser multiphoton dissociation of ketene 202 (1993) 179

- Ma, X., see C. Chen 203 (1993) 307
- Ma, X., D.J. Kouri and D.K. Hoffman, Monte Carlo evaluation of real time Feynman path integrals using distributed approximating functions. Modified-Cayley versus symmetric split-operator formalism 208 (1993) 207
- Mabbs, R., see M. Brouard 204 (1993) 543
- Maçanita, A.L., see J. Seixas de Melo 204 (1993) 556
- Mackay, A.L., see H. Terrones 207 (1993) 45
- Maeda, H., see Y. Matsuo 201 (1993) 341
- Maeda, K., see Y. Yamakage 204 (1993) 411
- Maeyama, Y., see H. Kanno 210 (1993) 107
- Magni, V., see A. Cybo-Ottone 208 (1993) 345
- Mahmoud, G., see K. Fagerström 204 (1993) 226; 208 (1993) 321
- Mahrt, R.F., see U. Lemmer 203 (1993) 28; 209 (1993) 243
- Maier, J.P., see J. Fulara 206 (1993) 203
- Majer, G., see B. Black 201 (1993) 550
- Majid, F.B. and I. Miyagawa, Detection of several types of the E' center by the ESR double-modulation spectrum method 209 (1993) 469
- Majumdar, D., see K. Das 204 (1993) 393
- Mak, C.H. and J.N. Gehlen, A dynamical test of the centroid formulation of quantum transition state theory for electron transfer reactions 206 (1993) 130
- Makhov, D.V., see V.V. Egorov 208 (1993) 420
- Maki, J., see K. Yamaguchi 207 (1993) 9; 210 (1993) 201
- Makri, N., see M. Topaler 210 (1993) 285, 448
- Malagoli, M., see J. San-Fabián 206 (1993) 253
- Malinauskas, A., see G. Niaura 207 (1993) 455
- Malinowski, P., see K. Jankowski 205 (1993) 471
- Malkin, V.G., O.L. Malkina and D.R. Salahub, Calculations of NMR shielding constants by uncoupled density functional theory 204 (1993) 80
- Malkin, V.G., O.L. Malkina and D.R. Salahub, Calculations of NMR shielding constants beyond uncoupled density functional theory. IGLO approach 204 (1993) 87
- Malkina, O.L., see V.G. Malkin 204 (1993) 80, 87
- Malli, G.L., A.B.F. Da Silva and Y. Ishikawa, Universal Gaussian basis set for relativistic calculations on atoms and molecules 201 (1993) 37
- Malli, G.L., see A.B.F. Da Silva 203 (1993) 201
- Malrieu, J.-P., see M.-B. Lepetit 208 (1993) 503
- Malrieu, J.P., see À. Povill 209 (1993) 126
- Mandal, P.K. and P.T. Manoharan, Effect of the fifth coordination site on the spin states of bis(benzoylacetylacetonato)bispyridinedicopper(II) complex 210 (1993) 463
- Manke II, G., see E. Arunan 207 (1993) 81
- Manoharan, P.T., see P.K. Mandal 210 (1993) 463
- Manolopoulos, D.E., see P.W. Fowler 202 (1993) 371
- Manolopoulos, D.E. and P.W. Fowler, A fullerene without a spiral 204 (1993) 1
- Manolopoulos, D.E., see G. Orlandi 208 (1993) 441
- Manzanares I, C., A. Brock, J. Peng and V.M. Blunt, Vibrational spectroscopy of C-H bonds of methane and tetramethylsilane in liquid argon solutions 207 (1993) 159
- Mao, D., see H. Hou 203 (1993) 555
- Mao, X., D. Wu and C. Ye, Radiation damping effects on NMR signal intensities 204 (1993) 123

Mapledoram, L.D., A. Wander and D.A. King, Breakdown of adsorbate site assignment from vibrational frequencies. NO on Ni(111) re-visited by tensor LEED	208 (1993) 409
Marco, G.D., see S. Campagna	206 (1993) 30
Marconi, G. and P.R. Salvi, Vibronic effects in the MCD spectrum of buckminsterfullerene	202 (1993) 335
Mares, J.A., C. Pedrini, B. Moine, K. Blazek and J. Kvapil, Optical studies of Ce ³⁺ -doped gadolinium aluminium perovskite single crystals	206 (1993) 9
Marian, C.M., see M. Ernzerhof	204 (1993) 59
Maricq, M.M., see T.J. Wallington	205 (1993) 62
Marinelli, F., see I. Baraille	207 (1993) 203
Marino, M.M. and W.C. Ermler, Ab initio rep-based relativistic core/valence polarization operator	206 (1993) 271
Märk, T.D., see T. Rauth	201 (1993) 345
Märk, T.D., see M. Lezius	203 (1993) 232
Markert, F. and P. Pagsberg, UV spectra and kinetics of radicals produced in the gas phase reactions of Cl, F and OH with toluene	209 (1993) 445
Marković, N., see J.B.C. Pettersson	201 (1993) 421
Marshall, P., A theoretical study of nitrososilane and six isomers of SiH ₃ NO	201 (1993) 493
Marshall, P., see A. Goumri	204 (1993) 296
Marshall, P., see C.A. Taylor	205 (1993) 493
Martin, J.M.L., see Z. Slanina	201 (1993) 54
Martin, J.M.L., P.R. Taylor and T.J. Lee, Accurate ab initio quartic force fields for the N ₂ O and CO ₂ molecules	205 (1993) 535
Martin, J.M.L. and P.R. Taylor, The mechanism of the reaction CH+N ₂ →HCN+N	209 (1993) 143
Martin, M., see J. Luque	202 (1993) 179
Martin, M.M., P. Plaza, N. Dai Hung, Y.H. Meyer, J. Bourson and B. Valeur, Photoejection of cations from complexes with a crown-ether-linked merocyanine evidenced by ultrafast spectroscopy	202 (1993) 425
Martinez, M.L., see P.-T. Chou	204 (1993) 395
Martinho, J.M.G., see E.M.S. Castanheira	206 (1993) 45
Maruyama, K., see A. Osuka	201 (1993) 223
Marynick, D.S., see J.R. Rogers	205 (1993) 197
Maser, W., see H.J. Byrne	204 (1993) 461
Mashnin, T.S., A.V. Chernyshev and L.N. Krasnoperov, Laser photolysis of ICl. A time-resolved LMR measurement of Cl(² P _{1/2}) relative yield	207 (1993) 105
Mason, B.P., see N. Al-Rubaiey	204 (1993) 301
Masuda, H., see K. Waizumi	205 (1993) 317
Masuhara, H., see M. Yanagimachi	201 (1993) 115
Masuhara, H., see H. Sakai	208 (1993) 283
Masuhara, H., see K. Kamada	210 (1993) 89
Mataga, N., see A. Osuka	201 (1993) 223
Mataga, N., see H. Miyasaka	202 (1993) 419
Matousek, P., see R.E. Hester	208 (1993) 471
Matsuda, M., see A. Watanabe	207 (1993) 132
Matsui, H., see A. Miyoshi	204 (1993) 241
Matsui, S., see T.W. Ebbesen	209 (1993) 83
Matsuo, Y., H. Maeda and M. Takami, Gas-phase ion-molecule reaction in an RF ion trap. Reactivity of the 5d transition series of metal ions (Lu ⁺ , Hf ⁺ , Ta ⁺ , and W ⁺) with O ₂	201 (1993) 341

Matsuoka, O., L. Pisani and E. Clementi, All-electron Dirac-Fock-Roothaan calculations on lead oxide	202 (1993) 13
Matyushov, D.V., Electron transfer in molecules with conformational transitions	203 (1993) 131
Maul, C., see T. Haas	202 (1993) 108
Mayer, I. and P.-O. Löwdin, Some comments on the general Hartree-Fock method	202 (1993) 1
Mayne, H.R., see L.J. Rawluk	202 (1993) 291
Mayne, H.R., see J.N. Beauregard	205 (1993) 515
Mayo, K.H., see V.A. Daragan	206 (1993) 393
Mazitov, R.K., P. Diehl and R. Seydoux, Nuclear magnetic resonance of ^3He dissolved in vitreous silica	201 (1993) 543
McCabe, P., see J.N.L. Connor	206 (1993) 119
McClain, W.M., see Y. Shi	205 (1993) 91
McClure, S.M., see L.S. Wang	207 (1993) 354
McCombie, J., P.A. Hepworth, T.F. Palmer, J.P. Simons and M.J. Walker, Conformational analysis via LIF spectroscopy of jet-cooled molecules: hydroxy- and amino-benzoic acid esters	206 (1993) 37
McDowell, H.K., P. Tsai and A.M. Clogston, Maximum entropy approach in molecular timescale generalized Langevin equation theory	210 (1993) 274
McElvany, S.W., see S.B.H. Bach	209 (1993) 57
McFarlane, R.A., see D.H. Burde	205 (1993) 69
McGarvey, D.J., F. Wilkinson, D.R. Worrall, J. Hobley and W. Shaikh, Picosecond absorption studies on the role of charge transfer interactions in the mechanism of quenching of triplet states by molecular oxygen	202 (1993) 528
McIntyre, S.R., see J.W. Askew	209 (1993) 190
McKee, M.L., Computational study of the addition of OH radical to $\text{S}=\text{C}=\text{S}$	201 (1993) 41
McKee, M.L., Ab initio study of GaB_3H_8 structures	201 (1993) 47
McKee, M.L., Theoretical study of the ClCS_2 adduct	209 (1993) 195
McMahon, C., see N. Al-Rubaiey	204 (1993) 301
McMorrow, D. and W.T. Lotshaw, Evidence for low-frequency ($\approx 15\text{ cm}^{-1}$) collective modes in benzene and pyridine liquids	201 (1993) 369
McNichols, A. and T. Carrington Jr., Vibrational energy levels of formaldehyde calculated from an internal coordinate Hamiltonian using the Lanczos algorithm	202 (1993) 464
McPhillen, M., see W.-H. Kim	207 (1993) 443
McQuaid, M.J., G.W. Lemire and R.C. Sausa, Observation and analysis of rotationally resolved $\tilde{\text{B}}-\tilde{\text{X}}$ electronic transitions of $\text{CD}-\text{Ar}$	210 (1993) 350
Meads, R.F., C.L. Hartz, R.R. Lucchese and J.W. Bevan, Rovibrationally resolved, continuous supersonic-jet, Fourier-transform, infrared absorption spectroscopy of weakly bound heterodimers: analysis of ν_1 and ν_2 of $\text{OC}-\text{HCl}$	206 (1993) 488
Medina, A., J.M.M. Roco, S. Velasco and A. Calvo Hernández, Memory and nonadditivity effects on the far-infrared spectra of DCl , HCl and HF in liquid SF_6	202 (1993) 364
Medina, F.D., see H. Wang	205 (1993) 497
Medina-Noyola, M., see G. Cruz de León	207 (1993) 294
Meech, S.R., see M.J.E. Morgenthaler	202 (1993) 57
Meier, B.H., see M. Tomaselli	205 (1993) 145
Meijer, G., see P.H.M. van Loosdrecht	205 (1993) 191
Meijer, G., see B.J. Nelissen	207 (1993) 343
Meinke, M., L. Parenteau, P. Rowntree, L. Sanche and E. Illenberger, Electron-stimulated desorption of anions from condensed CF_4	205 (1993) 213

Meiswinkel, R. and H. Köppel, Combined Jahn-Teller and pseudo-Jahn-Teller effects in the P_4^+ cation	201 (1993) 449
Melone, S., see R. Caciuffo	201 (1993) 427
Mendis, C., see K.T. Wu	210 (1993) 118
Menegotti, L., see D. Bassi	207 (1993) 167
Meng, Q.-X., see Y. Yamakage	204 (1993) 411
Menningen, K.L., M.A. Childs, P. Chevako, H. Toyoda, L.W. Anderson and J.E. Lawler, Methyl radical production in a hot filament CVD system	204 (1993) 573
Menon, M. and K.R. Subbaswamy, Optimized structures of $C_{60}O$ and $C_{60}O_2$ calculated by a damped molecular dynamics optimization scheme	201 (1993) 321
Menou, M. and C. Leforestier, Labeling the HCN vibrational states in the regular spectrum	210 (1993) 294
Merchán, M., see R. González-Luque	204 (1993) 323
Mercouris, T., I.D. Petsalakis and C.A. Nicolaides, Time-dependent laser-induced molecular formation from repulsive surfaces	208 (1993) 197
Merkt, F., H.H. Fielding and T.P. Softley, Electric field effects on zero-kinetic-energy photoelectron spectra: an explanation of observed trends	202 (1993) 153
Messaoudi, A., J. Conard, R. Setton and F. Béguin, New intercalation compounds of C_{60} with cesium	202 (1993) 506
Mestdagh, J.M., see A. Lallement	204 (1993) 440
Mestechkin, M.M. and G.E. Whyman, Higher Hartree-Fock frequency-dependent hyperpolarizabilities (Chem. Phys. Letters 193 (1992) 395). Erratum	205 (1993) 598
Metropoulos, A., B. Engels and S.D. Peyerimhoff, The chemi-ionization reaction $O+CH \rightarrow HCO^+ + e^-$. Collinear O-CH approach	204 (1993) 333
Mets, L., see M. Du	201 (1993) 535
Metz, H., see R. Heidler	209 (1993) 299
Mews, A., see A. Eychmüller	208 (1993) 59
Meyer, H.-D., see K. Zähringer	206 (1993) 247
Meyer, Y.H., see M.M. Martin	202 (1993) 425
Meynadier, P., see A. Lallement	204 (1993) 440
Michaels, D.C., see Y. Lee	206 (1993) 464
Michel-Beyerle, M.E., see F. Pöllinger	209 (1993) 251
Michels, H.H. and R.H. Hobbs, Electronic structure and thermochemistry of silicon hydride and silicon fluoride anions	207 (1993) 389
Michtchenko, A.V., see D.V. Shalashilin	207 (1993) 250
Mielke, S.L., see D.W. Schwenke	203 (1993) 565
Mielke, Z., see K. Tokhadze	202 (1993) 87
Miguel, B., see J.M. García de la Vega	207 (1993) 270
Mijoule, C., Z. Latajka and D. Borgis, Density functional theory applied to proton-transfer systems. A numerical test	208 (1993) 364
Mikami, N., S. Sato and M. Ishigaki, Stable forms of the phenol-complex cations as revealed by trapped ion photodissociation spectroscopy	202 (1993) 431
Mikami, N., see T. Sasaki	209 (1993) 379
Mikhailin, V.V., see C. Pedrini	206 (1993) 470
Miki, Y., see Y. Watanabe	206 (1993) 62
Miki, Y., see Y. Koyama	208 (1993) 479
Miklavic, S.J., A simulation study of flexible zwitterionic monolayers. Effects of solvency and spacer molecules	210 (1993) 25

- Mikušik, P. and Z. Bastl, PdTi surface alloy formation at room temperature: its indication by electronic relaxation processes as evidenced in Pd(CVV) Auger spectra 202 (1993) 315
- Mikušik, P., see Š. Pick 208 (1993) 97
- Miller, T.A., see A.M. Ellis 201 (1993) 132
- Miller, T.A., see B.-C. Chang 207 (1993) 55, 62
- Miller, W.H., see S. Keshavamurthy 205 (1993) 96
- Miller, W.H., see W.H. Thompson 206 (1993) 123
- Miller, W.H., see A.K. Belyaev 209 (1993) 309
- Mimuro, M., U. Nagashima, S. Nagaoka, S. Takaichi, I. Yamazaki, Y. Nishimura and T. Katoh, Direct measurement of the low-lying singlet excited (2^1A_g) state of a linear carotenoid, neurosporene, in solution 204 (1993) 101
- Minaev, B.F., see Y. Luo 209 (1993) 513
- Minichino, C., see V. Barone 205 (1993) 324
- Minkin, V.I., see M.N. Glukhovtsev 205 (1993) 529
- Miquel, G., see R.V. Bensasson 210 (1993) 141
- Misawa, H., see K. Kamada 210 (1993) 89
- Mitra, S., R. Das and S. Mukherjee, Intramolecular proton transfer in the first-excited electronic states of 4-methyl-2,6-diformyl phenol in some hydrocarbon solvents 202 (1993) 549
- Mittal, J.P., see H.N. Ghosh 203 (1993) 5
- Mittal, J.P., see R.K. Vatsa 205 (1993) 133; 207 (1993) 75
- Mittal, J.P., see R. Seshadri 205 (1993) 395
- Mittal, J.P., see A. Kumar 208 (1993) 385
- Mittelbach, A., see H.J. Byrne 204 (1993) 461
- Mittler-Neher, S., see M. Cha 202 (1993) 44
- Miyagawa, I., see F.B. Majid 209 (1993) 469
- Miyasaka, H., F. Ikejiri and N. Mataga, Picosecond 266 nm laser photolysis studies on the excimer formation process of polystyrene in solution. Effects of temperature and degree of polymerization on the formation time constants 202 (1993) 419
- Miyoshi, A., K. Ohmori, K. Tsuchiya and H. Matsui, Reaction rates of atomic oxygen with straight chain alkanes and fluoromethanes at high temperatures 204 (1993) 241
- Mizuki, J., see K. Tanigaki 203 (1993) 33
- Mizuki, J., see M. Kosaka 203 (1993) 429
- Mizunuma, S., see N. Kobayashi 205 (1993) 51
- Mó, O., see M. Esseffar 209 (1993) 557
- Moc, J., A.E. Dorigo and K. Morokuma, Transition structures for H_2 elimination from XH_4 hypervalent species ($X=S$, Se and Te). Ab initio MO study 204 (1993) 65
- Mochida, T., A. Izuoka, N. Sato and T. Sugawara, Decarboxylation of crystalline 2-carboxy-3-hydroxy- dibenzo[a,c]tropone followed by solid-state crystallization 210 (1993) 389
- Modestov, A.D. and V.E. Kazarinov, Electrochemical reduction of 2,6-diphenylpyrylium cations by spin-polarized electrons. The Hedvall effect 206 (1993) 401
- Mohar, B., see I. Gutman 203 (1993) 378
- Moine, B., see J.A. Mares 206 (1993) 9
- Moine, B., see C. Pedrini 206 (1993) 470
- Moiseyev, N., see N. Rom 204 (1993) 175
- Molin, Yu.N., see B.M. Tadjikov 208 (1993) 32
- Möller, T., see R. Karnbach 203 (1993) 248
- Moncrieff, D. and S. Wilson, Finite basis set versus finite difference and finite element methods 209 (1993) 423

Montanari, L., see C. Corvaja	210 (1993) 355
Moore, J.N., see R.E. Hester	208 (1993) 471
Moravskii, A.P., see V.A. Nadtochenko	208 (1993) 431
Morgan III, J.D., see T.C. Scott	203 (1993) 175
Morgen, M., W. Price, L. Hunziker, P. Ludowise, M. Blackwell and Y. Chen, Femtosecond Raman-induced polarization spectroscopy studies of rotational coherence in O ₂ , N ₂ and CO ₂	209 (1993) 1
Morgenthaler, M.J.E. and S.R. Meech, Picosecond dynamics of torsional motion in malachite green adsorbed on silica. A time-resolved surface second harmonic generation study	202 (1993) 57
Mori, T., see K. Hiraoka	207 (1993) 178
Mori, W., see M. Okumura	207 (1993) 1
Mori, W., see K. Yamaguchi	210 (1993) 201
Mori, Y., see N. Ooba	207 (1993) 468
Moritz, P., see M. Halonen	203 (1993) 157
Morokuma, K., see N. Koga	202 (1993) 330
Morokuma, K., see J. Moc	204 (1993) 65
Morokuma, K., see K. Hashimoto	206 (1993) 297
Morris, R.C., see R.C. Haddon	203 (1993) 433
Morse, M.D., see L.M. Russon	204 (1993) 235
Morter, C.L., S.K. Farhat and R.F. Curl, The ν_1 fundamental of HCCN: evidence for quasilinearity	207 (1993) 153
Morton, J.R., K.F. Preston, P.J. Krusic and L.B. Knight Jr., The proton hyperfine interaction in HC ₆₀ , signature of a potential interstellar fullerene	204 (1993) 481
Mosley, D.H., see B. Champagne	210 (1993) 232
Moss, R.E., Electronic g/u symmetry breaking in H ₂ ⁺	206 (1993) 83
Moudden, Z., see C. Naulin	202 (1993) 452
Movaghar, B., see H.J. Byrne	204 (1993) 461
Mozumder, A., Quasi-ballistic model of electron mobility in liquid hydrocarbons	207 (1993) 245
Mühlhäuser, M., G. Froudakis, A. Zdetsis and S.D. Peyerimhoff, Importance of multicenter bonding in the structure of Si ₃ C ₃	204 (1993) 617
Mukamel, S., see J.A. Leegwater	203 (1993) 125
Mukherjee, D., see N. Vaval	209 (1993) 292
Mukherjee, S., see S. Mitra	202 (1993) 549
Mukherjee, T., see R. Seshadri	205 (1993) 395
Mukoh, A., see H.S. Nalwa	203 (1993) 109
Müller, U., W. Haas and R. Brenn, Photon/fragment-ion coincidences following 2 MeV He ⁺ impact on CF ₄	201 (1993) 387
Müller-Dethlefs, K., see I. Fischer	202 (1993) 542
Mura, M.E. and D.A. Smith, External polarization functions and polarizability calculations for H ₂	203 (1993) 578
Murad, E., see R.A. Dressler	204 (1993) 111
Murai, H., N. Ishiwata, K. Kuwata, Y. Sakaguchi and H. Hayashi, External magnetic field effects upon chemical reactions of quasi-stable radical pairs in an SDS micelle	203 (1993) 482
Murakami, A., see K. Aoki	209 (1993) 211
Murase, N. and K. Horie, Mechanism of laser-induced hole filling in photochemical hole burning	209 (1993) 42

Master index to volumes 201-210

Murchison, H., see R.G. Alden	208 (1993) 350
Muris, S., see T. Etzkorn	208 (1993) 307
Murray, C.W., see J.S. Andrews	201 (1993) 458
Murray, C.W., see R.D. Amos	202 (1993) 489
Murray, C.W., see S.M. Colwell	210 (1993) 261
Musco, A., see A. Cybo-Ottone	208 (1993) 345
Myers, A.B., see C. Westerfield	202 (1993) 409

- Nadjo, L., see R. Céolin 208 (1993) 259
- Nadtochenko, V.A., N.N. Denisov, I.V. Rubtsov, A.S. Lobach and A.P. Moravskii, Photochemical properties of C₆₀. Triplet-excited C₆₀ quenching by electron acceptors TCNQ and TCNE in solution. Laser photolysis study 208 (1993) 431
- Nagai, Y., see A. Watanabe 207 (1993) 132
- Nagaoka, S., see M. Mimuro 204 (1993) 101
- Nagasawa, Y., see A. Yartsev 207 (1993) 546
- Nagase, S., K. Kobayashi, T. Kato and Y. Achiba, A theoretical approach to C₈₂ and LaC₈₂ 201 (1993) 475
- Nagashima, U., see M. Mimuro 204 (1993) 101
- Nagashima, U., see K. Watanabe 209 (1993) 109
- Nagata, T., see M. Ichihashi 204 (1993) 219
- Nagayama, K., see C.D. Dushkin 204 (1993) 455
- Nagayama, K., see M. Irisa 207 (1993) 430
- Naik, P.D., see R.K. Vatsa 205 (1993) 133; 207 (1993) 75
- Naik, P.D., see A. Kumar 208 (1993) 385
- Naitoh, Y., Y. Fujimura, K. Honma and O. Kajimoto, Photodissociation of the NO dimer at 193 nm. The rotational alignment of the NO(A) fragments 205 (1993) 423
- Nakagawa, S. and N. Kosugi, Polarized one-electron potentials fitted by multicenter polarizabilities and hyperpolarizabilities. Ab initio SCF-CI calculation of water 210 (1993) 180
- Nakagawa, Y., I. Suzuka and M. Ito, Electronic spectra of pyridine N-oxide in a supersonic jet. A very stable He complex? 208 (1993) 453
- Nakanaga, T., F. Ito and H. Takeo, Time-resolved high-resolution FTIR absorption spectroscopy in a pulsed discharge 206 (1993) 73
- Nakano, H., MCSCF reference quasidegenerate perturbation theory with Epstein-Nesbet partitioning 207 (1993) 372
- Nakano, M. and K. Yamaguchi, A proposal of new organic third-order nonlinear optical compounds. Centrosymmetric systems with large negative third-order hyperpolarizabilities 206 (1993) 285
- Nakano, M., see M. Okumura 207 (1993) 1
- Nakashima, N., see A. Iwata 207 (1993) 137
- Nakayama, T., T. Hanada, K. Ibuki and K. Hamanoue, Formation of an exciplex or free radical ions upon excitation of 9,10-dibromoanthracene in solvents containing triethylamine 209 (1993) 367
- Nalewajski, R.F., see A.J.C. Varandas 205 (1993) 253
- Nalwa, H.S., A. Kakuta and A. Mukoh, Third-order optical nonlinearities of tetrakis-*n*-pentoxy carbonyl metallo-naphthalocyanines 203 (1993) 109
- Nan, G., I. Burak and P.L. Houston, Photodissociation of OCS at 222 nm. The triplet channel 209 (1993) 383
- Nanayakkara, A., see J. Cioslowski 203 (1993) 137
- Nandi, P.K., see A.B. Sannigrahi 204 (1993) 73
- Napolov, D.V., see G.E. Chudinov 201 (1993) 250
- Naulin, C., M. Costes, Z. Mouddeh, N. Ghanem and G. Dorthe, The dissociation energy of the SiN radical determined from a crossed molecular beam study of the Si + N₂O → SiN + NO reaction 202 (1993) 452
- Nayuki, T., see O. Kajimoto 209 (1993) 357
- Nebot Gil, I., see I. García Cuesta 205 (1993) 484
- Negishi, Y., see N. Watanabe 207 (1993) 493

Neher, D., see M. Cha	202 (1993) 44
Nelissen, B.J., P.H.M. van Loosdrecht, M.A. Verheijen, A. van der Avoird and G. Meijer, Structure and lattice dynamics of the ordered phase of solid C ₇₀	207 (1993) 343
Nelson, S.D., see P. Koziol	201 (1993) 383
Nelson, T.O., see M.K. Richmann	210 (1993) 71
Nesterenko, A., see E. Borsella	203 (1993) 15
Neuhauser, D., Reactive scattering with absorbing potentials in general coordinate system, Chem. Phys. Letters 200 (1992) 173. Erratum	203 (1993) 444
Neumann, A., H. Rabus, D. Arvanitis, T. Solomun, K. Christmann and K. Baberschke, Alkali-metal-induced bond length contraction of acetonitrile (CH ₃ CN) on Au(100)	201 (1993) 108
Nevin, W.A., see N. Kobayashi	205 (1993) 51
Newnham, D., see J. Ballard	208 (1993) 295
Nguyen, M.T., A theoretical study of the O=S-B=O radical	205 (1993) 572
Ni, C.-K. and G.W. Flynn, State and velocity distributions of Cl atoms produced in the photodissociation of ICl at 237 nm	210 (1993) 333
Niaura, G. and A. Malinauskas, Surface-enhanced Raman scattering from chloride on cop- per electrodes	207 (1993) 455
Nicholls, J.F.H., T.P.J. Han, B. Henderson and F. Jaqué, Charge compensation and site- selective luminescence of Cr ³⁺ :LiNbO ₃	202 (1993) 560
Nicholls, J.F.H., T.P.J. Han, B. Henderson and J. Jaqué, Charge compensation and site- selective of Cr ³⁺ :LiNbO ₃ (Chem. Phys. Letters 202 (1993) 560). Erratum	207 (1993) 575
Nichols, J. and J. Simons, Frequency-dependent polarizability of -CC- linked para-ni- troaniline monomer through pentamer	210 (1993) 471
Nickolaissen, S.L., see H.E. Cartland	210 (1993) 327
Nicolaides, C.A., see G. Theodorakopoulos	207 (1993) 321
Nicolaides, C.A., see T. Mercouris	208 (1993) 197
Niedner-Schatteburg, G., see I. Fischer	202 (1993) 542
Nielsen, O.J., T. Ellermann and T.J. Wallington, UV absorption spectrum and kinetics of the self-reaction of neopentyl radicals in the gas phase at 298 K	203 (1993) 302
Nielsen, O.J., see J. Sehested	206 (1993) 369
Nielsen, O.J., see C. Kelly	207 (1993) 498
Nieminen, J., see J. Lundell	208 (1993) 247
Nieuwenhuys, B.E., see M.F.H. van Tol	205 (1993) 207
Nikitin, E.E., see D.M. Willberg	201 (1993) 506
Nishimura, N., see O. Takahashi	207 (1993) 379
Nishimura, Y., see A. Osuka	201 (1993) 223
Nishimura, Y., see M. Mimuro	204 (1993) 101
Nishina, Y., see Y. Saito	209 (1993) 72
Nishiya, T., see T. Kono	201 (1993) 166
Nishiyama, K., see M. Yoshizawa	207 (1993) 461
Nisoli, M., see A. Cybo-Ottone	208 (1993) 345
Niu, B., D.A. Shirley, Y. Bai and E. Daymo, High-resolution He I α photoelectron spec- troscopy of H ₂ CO and D ₂ CO using supersonic molecular beams	201 (1993) 212
Niu, B., Y. Bai and D.A. Shirley, High resolution He I α photoelectron spectroscopy of H ₂ CCO and D ₂ CCO using supersonic molecular beams	201 (1993) 217
Nobes, R.H., see M.J. Frisch	206 (1993) 225
Nogueira, M.M., see F.J. Aoiz	204 (1993) 359

Master index to volumes 201-210

Nomoto, T., see Y. Hirata	209 (1993) 397
Nomura, O., see K. Aoki	202 (1993) 33
Nonose, S., see M. Ichihashi	204 (1993) 219
Noro, T., see K. Yamaguchi	207 (1993) 9; 210 (1993) 201
Novikov, S.A., see A.G. Kochur	208 (1993) 541
Novikov, S.A., A.G. Kochur and V.L. Sukhorukov, Double ionization satellites in KVV Auger spectra of the HF and CO molecules	208 (1993) 545
Nunzi, J.-M., see N. Pfeffer	201 (1993) 357

- Ochiai, Y., see T.W. Ebbesen 209 (1993) 83
- Oda, I., J. Inukai and M. Ito, Compression structures of carbon monoxide on a Pt(111) electrode surface studied by in situ scanning tunneling microscopy 203 (1993) 99
- O'Donnell, K.P., see Y. Gao 210 (1993) 67
- Ohkohchi, M., see Y. Saito 209 (1993) 72
- Ohline, S.M., J. Romascan and P.M. Felker, Time-resolved ionization depletion. A new picosecond method for molecular beam studies 207 (1993) 563
- Ohmori, K., see A. Miyoshi 204 (1993) 241
- Ohoyama, H., T. Iguro, T. Kasai and K. Kuwata, Orientation dependence of chemiluminescence spectra of CF₃ formed in the reaction of oriented CF₃H with Ar(³P) 209 (1993) 361
- Ohshima, S., see N. Saito 208 (1993) 39
- Okada, M., see K. Tanaka 202 (1993) 394
- Okada, M., K. Okahara, K. Tanaka and T. Yamabe, Electronic structures of mono-anionized higher fullerenes. C₇₆⁻, C₇₈⁻, C₈₂⁻ and C₈₄⁻ 209 (1993) 91
- Okada, S., Y. Abe, S. Taniguchi and S. Yamabe, Five-membered ring intermediates in the gas-phase CN⁻ + N₂O reaction. A theoretical study 209 (1993) 161
- Okada, T., see A. Osuka 201 (1993) 223
- Okada, T., see Y. Hirata 209 (1993) 397
- Okahara, K., see K. Tanaka 202 (1993) 394
- Okahara, K., see M. Okada 209 (1993) 91
- Okamoto, H., R. Inaba, K. Yoshihara and M. Tasumi, Femtosecond time-resolved polarized coherent anti-Stokes Raman studies on reorientational relaxation in benzonitrile 202 (1993) 161
- Okamoto, H., R. Inaba, M. Tasumi and K. Yoshihara, Femtosecond vibrational dephasing of the C≡N stretching in alkanenitriles with long alkyl chains. Dependence on the chain length and hydrogen bonding 206 (1993) 388
- Okamoto, Y. and Y. Itikawa, Elastic scattering of electrons by ozone molecules 203 (1993) 61
- Okuda, M., see Y. Saito 209 (1993) 72
- Okumura, M., K. Yamaguchi, M. Nakano and W. Mori, A theoretical explanation of the organic ferromagnetism in the β-phase of para-nitrophenyl nitronyl nitroxide 207 (1993) 1
- Okumura, M., see K. Yamaguchi 207 (1993) 9; 210 (1993) 201
- Oldfield, E., see A.C. de Dios 205 (1993) 108
- Oldmixon, R., see K.T. Wu 210 (1993) 118
- Olivier-Fourcade, J., see M. Womes 201 (1993) 555
- Olsson, T., see L.-E. Berg 209 (1993) 47
- Ondrechen, M.J., see X.M. Wu 205 (1993) 85
- Ong, S., see X. Zhao 202 (1993) 513
- Onuchic, J.N., see S.S. Skourtis 209 (1993) 171
- Ooba, N., S. Tomaru, T. Kurihara, Y. Mori, Y. Shuto and T. Kaino, Resonant subpicosecond degenerate four-wave mixing for a mainchain polymer with a definite short π conjugation 207 (1993) 468
- Ooi, H., M. Yoshizawa, M. Yamashita and T. Kobayashi, Ultrafast optical response in a quasi-one-dimensional halogen-bridged mixed-valence complex [Pd(en)₂][PdCl₂(en)₂](ClO₄)₄ 210 (1993) 384
- Ookubo, N., see M. Tomonari 203 (1993) 603
- Oonishi, I., see N. Saito 208 (1993) 39
- Orlandi, G., F. Zerbetto, P.W. Fowler and D.E. Manolopoulos, The electronic structure and vibrational frequencies of the stable C₇₆ isomer of D₂ symmetry 208 (1993) 441

Master index to volumes 201-210

Ormerod, R.M., see C. Hardacre	206 (1993) 171
Oss, S., see F. Iachello	205 (1993) 285
Oss, S., see D. Bassi	207 (1993) 167
Östling, D. and A. Rosén, Electronic properties of the C ₆₀ molecule doped with potassium	202 (1993) 389
Osuka, A., F. Kobayashi, K. Maruyama, N. Mataga, T. Asahi, T. Okada, I. Yamazaki and Y. Nishimura, Geometry- and solvent-polarity-dependent photoinduced electron transfer in conformationally restricted magnesium-free-base hybrid diporphyrins	201 (1993) 223
Oswald, M., see P. Botschwina	209 (1993) 117
Oswald, R., see P. Botschwina	209 (1993) 117
Ottinger, Ch., see R. Bachmann	203 (1993) 314
Ottinger, Ch., A.F. Vilesov and T. Winkler, Laser-induced phosphorescence of jet-cooled pyrimidine	208 (1993) 299
Ouhlal, A., A. Selmani, A. Yelon and M. Andrews, Chemical bonding of copper and chromium at the carbonyl group of acetone	202 (1993) 51
Ozaki, J., The change in character of the even z-parity states from antibonding to bonding in the H ₂ ⁺ ion by strong magnetic fields	203 (1993) 184
Özen, G., see X. Wu	203 (1993) 211

Pacchioni, G., see P.S. Bagus	207 (1993) 569
Pack, R.T., see G.A. Parker	202 (1993) 75
Paddon-Row, M.N., see J.M. Warman	210 (1993) 397
Padkjær, S.B., see S.E. Branchett	208 (1993) 523
Page, M., see J. Ballard	208 (1993) 295
Pagsberg, P., see A. Sillesen	201 (1993) 171; 203 (1993) 613
Pagsberg, P., see J.T. Jodkowski	203 (1993) 490
Pagsberg, P., see F. Markert	209 (1993) 445
Pal, H., see R. Seshadri	205 (1993) 395
Pal, S., see P. Chakrabarti	201 (1993) 24
Pal, S., see N. Vaval	209 (1993) 292
Palágyi, Z., H.F. Schaefer III and E. Kapuy, Ga ₂ H ₂ : planar dibridged, vinylidene-like, monobridged, and trans equilibrium geometries	203 (1993) 195
Paldus, J., see P. Piecuch	210 (1993) 243
Palit, D.K., see H.N. Ghosh	203 (1993) 5
Palmer, R.E., see I.M. Goldby	206 (1993) 181
Palmer, R.E., see L. Šiller	210 (1993) 15
Palmer, T.F., see J. McCombie	206 (1993) 37
Palmieri, P., see A. Laganà	202 (1993) 284
Palmieri, P., see R. Tarroni	207 (1993) 195
Palto, S.P., L.M. Blinov, S.G. Yudin, G. Greuer, M. Schönhoff and M. Lösche, Photoinduced optical anisotropy in organic molecular films controlled by an electric field	202 (1993) 308
Panas, I., Pauli repulsion and dispersion interaction in the self-consistent crystal field concept applied to the structures of solid HCN	201 (1993) 255
Panas, I., Theoretical molecular dipole moment derivatives in solid HCN	206 (1993) 305
Panas, I., Analysis of the intermolecular interactions in the FCN dimer	206 (1993) 312
Pandian, R.P., T.K. Chandrashekar and H. van Willigen, Photoexcited triplet ESR studies on thiaporphyrins and their protonated derivatives	202 (1993) 127
Papoušek, D., see P.L. Chapovsky	209 (1993) 305
Parchment, O.G., N.A. Burton and I.H. Hillier, Tautomeric equilibrium of 2-hydroxypyridine/2-pyridone: does a theoretical-experimental discrepancy exist?	203 (1993) 46
Parent, D.C., see S.B.H. Bach	209 (1993) 57
Parenteau, L., see M. Meinke	205 (1993) 213
Parenteau, L., see M.A. Huels	210 (1993) 340
Park, J., see E. Shin	209 (1993) 427
Párkányi, C., see H. Wang	205 (1993) 497
Parker, A.W., see R.E. Hester	208 (1993) 471
Parker, A.W., see C.J.S.M. Simpson	210 (1993) 5
Parker, G.A., R.T Pack and A. Laganà, Accurate 3D quantum reactive probabilities of Li+FH	202 (1993) 75
Parker, T.M., see D.W. Urry	201 (1993) 336
Parmigiani, F., see P.S. Bagus	207 (1993) 569
Parrinello, M., see K. Laasonen	207 (1993) 208
Parry, D.E., see S.R. Andrews	205 (1993) 102
Parson, R., see W.J. Hovingh	204 (1993) 369
Partridge, H., see C.W. Bauschlicher Jr.	205 (1993) 479; 208 (1993) 241
Partridge, H., see K.G. Dyall	206 (1993) 565

Pascual-Ahuir, J.L., see I. Tuñón	203 (1993) 289
Pasimeni, L., see C. Corvaja	210 (1993) 355
Pasinszki, T., see M. Fehér	205 (1993) 123
Pasinszki, T., T. Veszprémi and M. Fehér, An ab initio study of the geometries of boron pseudohalides	207 (1993) 384
Patidar, K.R., see P.M. Agrawal	208 (1993) 204
Paul, H., see G.-H. Goudsmit	208 (1993) 73
Pearl, D.M. and P.D. Burrow, Thermal decomposition and the apparent dissociative attachment cross section of heated methyl-, ethyl- and <i>t</i> -butyl-chloride	206 (1993) 483
Pearson, R.Z., see X. Yang	204 (1993) 145
Pedrini, C., see V. Ghiordănescu	205 (1993) 410
Pedrini, C., see J.A. Mares	206 (1993) 9
Pedrini, C., B. Moine, D. Bouttet, A.N. Belsky, V.V. Mikhailin, A.N. Vasil'ev and E.I. Zinin, Time-resolved luminescence of CeF ₃ crystals excited by X-ray synchrotron radiation	206 (1993) 470
Pegarkov, A.I. and I.I. Tugov, High-order perturbation theory for multi-term resonance Raman scattering of laser radiation from rotating diatomic molecules	203 (1993) 457
Pekker, S., see K. Kamarás	202 (1993) 325
Pélissier, M., see T. Leininger	205 (1993) 301
Pellarin, M., see B. Baguenard	205 (1993) 13
Pellé, F., see X. Wu	203 (1993) 211
Pemble, M.E., see P. Bond	208 (1993) 269
Peng, J., see C. Manzanares I	207 (1993) 159
Peng, X.-G., M.-L. Gao, Y.-Y. Zhao, S.-H. Kang, Y.-H. Zhang, Y. Zhang, D.-J. Wang, L.-Z. Xiao, T.-J. Li and H.-Y. Chen, Preparation of nanoparticulate Fe ₂ O ₃ -polymaleic monoester alternating Langmuir-Blodgett films with functional organic hydrophobic part	209 (1993) 233
Perchenek, N., see U. Strauss	202 (1993) 415
Percival, P.W., see D.M. Bartels	210 (1993) 129
Perel, A.S., see R.C. Haddon	203 (1993) 433
Persico, M., see G. Granucci	205 (1993) 331
Persson, B.N.J., see R. Zenobi	208 (1993) 414
Petrie, S., see G. Javahery	204 (1993) 467
Petrie, S., J. Wang and D.K. Bohme, Charge transfer from polycharged ions: C ₆₀ ⁿ⁺ as a model system	204 (1993) 473
Petrović, V., see I. Gutman	203 (1993) 378
Petsalakis, I.D., see G. Theodorakopoulos	207 (1993) 321
Petsalakis, I.D., see T. Mercouris	208 (1993) 197
Pettersson, J.B.C. and N. Marković, Dynamics of cluster scattering from surfaces	201 (1993) 421
Peyerimhoff, S.D., see M. Ernzerhof	204 (1993) 59
Peyerimhoff, S.D., see A. Metropoulos	204 (1993) 333
Peyerimhoff, S.D., see M. Mühlhäuser	204 (1993) 617
Peyerimhoff, S.D., see M. von Arnim	210 (1993) 488
Pfab, J., see H. Lin	210 (1993) 38
Pfeffer, G.A., see J.W. Askew	209 (1993) 190
Pfeffer, N., P. Raimond, F. Charra and J.-M. Nunzi, Determination of the two-photon absorption spectrum of a soluble polythiophene	201 (1993) 357
Phillips, C.M., see D. Raftery	201 (1993) 513
Phillips, D., see H. Yu	202 (1993) 141; 203 (1993) 515

Picaud, S. and C. Girardet, Adsorption of polar molecules on substrates with strong electric surface fields: from aggregates to monolayers	209 (1993) 340
Pichierri, F., see J. Botina	208 (1993) 153
Pichler, K., see A.R. Brown	210 (1993) 61
Pick, Š. and P. Mikušik, Tight-binding study of the electronic structure of Pd and Pt overlayers on W (011). The role of s electrons	208 (1993) 97
Piecuch, P., R. Toboła and J. Paldus, Approximate account of connected quadruply excited clusters in multi-reference Hilbert space coupled-cluster theory. Application to planar H ₄ models	210 (1993) 243
Piekara-Sady, L., A.S. Jeevarajan and L.D. Kispert, An ENDOR study of the canthaxanthin cation radical in solution	207 (1993) 173
Piekara-Sady, L., see A.S. Jeevarajan	209 (1993) 269
Pietrass, T., see C.R. Bowers	205 (1993) 168
Pilgrim, J.S., D.L. Robbins and M.A. Duncan, Photoionization electronic spectroscopy of AlOH	202 (1993) 203
Pilgrim, J.S., see C.S. Yeh	206 (1993) 509
Pilgrim, J.S., C.S. Yeh and M.A. Duncan, Photodissociation spectroscopy of Mg ⁺ -Ar	210 (1993) 322
Pines, A., see B. Black	201 (1993) 550
Pines, A., see C.R. Bowers	205 (1993) 168
Pines, A., see U. Werner	209 (1993) 17
Pines, A., see S.L. Gann	210 (1993) 405
Pinnaduwa, L.A., see T. Jaffke	203 (1993) 21
Pirotta, M., F. Güttler, H. Gygax, A. Renn, J. Sepiol and U.P. Wild, Single molecule spectroscopy. Fluorescence-lifetime measurements of pentacene in <i>p</i> -terphenyl	208 (1993) 379
Pisani, L., see O. Matsuoka	202 (1993) 13
Pisarchik, A., M. Abbouti Temsamani, J. Vander Auwera and M. Herman, The Fourier transform spectrum of the coloured vibrations in mono- and dideuteroacetylene	206 (1993) 343
Piskarskas, A., see R. Rotomskis	202 (1993) 233
Piuzzi, F., Hole-burning spectra of the isomeric forms of jet-cooled anthracene complexes with aniline derivatives	209 (1993) 484
Plaza, P., see M.M. Martin	202 (1993) 425
Plummer, D., see G.D. Hager	204 (1993) 420
Polak, M.L., M.K. Gilles, R.F. Gunion and W.C. Lineberger, Photoelectron spectroscopy of PbO ⁻	210 (1993) 55
Poliakoff, M., see A.I. Cooper	206 (1993) 175
Politzer, P. and J.M. Seminario, Energy changes associated with some decomposition steps of 1,3,3-trinitroazetidine. A non-local density functional study	207 (1993) 27
Poll, J.D., see C.G. Joslin	208 (1993) 86
Pollak, E., see G.R. Haynes	207 (1993) 309
Pöllinger, F., H. Heitele, M.E. Michel-Beyerle, M. Tercel and H.A. Staab, Stacked porphyrin-quinone triads as models for the primary charge-separation in photosynthesis	209 (1993) 251
Ponomarenko, D.V. and A.F. Shestakov, Polarizabilities of <i>ns</i> and <i>np</i> Rydberg states of the Li atom	210 (1993) 269
Pople, J.A., see B.G. Johnson	206 (1993) 229, 239
Pople, J.A., see P.M.W. Gill	209 (1993) 506
Port, H., see N. Holl	205 (1993) 25
Porter, G., see Q. Hong	202 (1993) 183

Master index to volumes 201-210

Pouchan, C., see I. Baraille	207 (1993) 203
Povill, À., R. Caballol, J. Rubio and J.P. Malrieu, Size-consistent selected configuration interaction calculations. A few tests of efficiency	209 (1993) 126
Praefcke, K., see S.M. Fan	204 (1993) 517
Prager, M., see R. Caciuffo	201 (1993) 427
Pramanick, S., see J. Berryhill	205 (1993) 39
Pratt, D.W., see X.-Q. Tan	207 (1993) 510
Pratt, L., see R.A. Harris	203 (1993) 399
Preston, K.F., see J.R. Morton	204 (1993) 481
Price, W., see M. Morgen	209 (1993) 1
Prinz, T., see A. Stangassinger	209 (1993) 372
Pugzhlys, A., see K. Kalninsh	209 (1993) 63
Pupyshev, V.I., see V.A. Kozlov	206 (1993) 151

Master index to volumes 201-210

Qian, C.X.W., see H.-P. Loock	206 (1993) 422
Qin, Q., see H. Hou	203 (1993) 555
Qin, Y., see Z. Yang	206 (1993) 445
Quack, M., see D. Luckhaus	205 (1993) 277
Quack, M., U. Schmitt and M.A. Suhm, Evidence for the (HF) ₅ complex in the HF stretching FTIR absorption spectra of pulsed and continuous supersonic jet expansions of hydrogen fluoride	208 (1993) 446
Quandt, R.W. and J.F. Hershberger, Kinetics of the SiH ₃ +O ₂ and SiH ₃ +NO ₂ reactions	206 (1993) 355
Quattrocchi, C., R. Lazzaroni and J.L. Brédas, Theoretical investigation of the conformational behavior of 2,2'-bithiophene	208 (1993) 120
Queisser, H.J., see U. Strauss	202 (1993) 415
Quickenden, T.I., see D. Lennon	201 (1993) 120
Quintale Jr., C., see L. Degève	208 (1993) 530

Rabin, I. and W. Schulze, Second ionization potentials of selected silver and gold clusters	201 (1993) 265
Rabinowitz, M.J., see S.M. Hwang	205 (1993) 157
Rabus, H., see A. Neumann	201 (1993) 108
Radhakrishnan, T.P., Semi-empirical theoretical study of the ground state spin of a series of non-alternant non-Kekulé molecules	207 (1993) 15
Radloff, W., see V. Stert	204 (1993) 287
Radloff, W., V. Stert, H.-H. Ritze and Th. Freudenberg, Ionization potentials and fragmentation thresholds of the heteroclusters benzene-(SF ₆) _m , <i>m</i> =1-4	205 (1993) 171
Raff, L.M., see X. Chang	206 (1993) 137
Raftery, D., M. Iannone, C.M. Phillips and R.M. Hochstrasser, Hydrogen abstraction dynamics in solution studied by picosecond infrared spectroscopy	201 (1993) 513
Raghavachari, K., P. Jakob and Y.J. Chabal, Step relaxation and surface stress at H-terminated vicinal Si(111)	206 (1993) 156
Raghavachari, K. and C.M. Rohlfing, Isomers of C ₇₈ . Competition between electronic and steric factors	208 (1993) 436
Raghavachari, K. and C. Sosa, Fullerene derivatives. Comparative theoretical study of C ₆₀ O and C ₆₀ CH ₂	209 (1993) 223
Raghavan, M. and V. Krishnan, Excitation energy transfer in covalently linked pheophorbide-porphyrin systems	205 (1993) 19
Rahman, N., see J. Botina	208 (1993) 153
Raimond, P., see N. Pfeffer	201 (1993) 357
RamaRao, K.V.S., see H.N. Ghosh	203 (1993) 5
Rama Rao, K.V.S., see R.K. Vatsa	205 (1993) 133; 207 (1993) 75
Rama Rao, K.V.S., see A. Kumar	208 (1993) 385
Ramasamy, P., see F.J. Kumar	206 (1993) 415
Ramaswamy, R., see P.V. Lalitha	201 (1993) 559
Ramsay, D.A., M. Barnett and W. Hüttner, Identification of triplet levels by Zeeman studies of microwave-optical double resonance in the $\tilde{A}^1A_2-\tilde{X}^1A_1$ system of thioformaldehyde	202 (1993) 406
Ran, Q., see C. Chen	203 (1993) 307
Rao, A.M., see R.A. Jishi	206 (1993) 187
Rao, C.N.R., see V. Varma	203 (1993) 545
Rao, C.N.R., see R. Seshadri	205 (1993) 395
Rassat, A., see V. Agafonov	208 (1993) 68
Rassat, A., see R. Céolin	208 (1993) 259
Ratajczak, E., see A. Sillesen	201 (1993) 171; 203 (1993) 613
Ratajczak, E., see J.T. Jodkowski	203 (1993) 490
Ratajczak, E., see K. Fagerström	204 (1993) 226; 208 (1993) 321
Ratajczak, H., see K. Tokhadze	202 (1993) 87
Rathna, A. and J. Chandrasekhar, Theoretical study of hydrogenated buckminsterfullerene derivatives with benzenoid rings, C ₆₀ H _{60-6n} (<i>n</i> =1-8)	206 (1993) 217
Ratliff, M., see I. Kanik	208 (1993) 341
Rauth, T., O. Echt and T.D. Märk, Production of non-stoichiometric SF ₆ cluster anions by electron attachment to SF ₆ clusters	201 (1993) 345
Rawluk, L.J., M. Keil, M.H. Alexander, H.R. Mayne and J.J.C. Barrett, Quantum effects in the inelastic scattering of HF and DF by argon	202 (1993) 291
Rayane, D., see B. Vezin	202 (1993) 209; 206 (1993) 521

Rayez, M.T. and M. Destriau, Theoretical study of thermal dissociation and recombination reactions of XONO_2 ($\text{X}=\text{F}, \text{Cl}, \text{Br}, \text{or I}$)	206 (1993) 278
Rayner, D.M., see L. Lian	205 (1993) 487
Reddy, B.V. and S.N. Khanna, Formation and stability of dodecahedral and fcc structures in metal-carbon clusters	209 (1993) 104
Reddy, D., T.K. Chandrashekar and H. van Willigen, Short-chain basket handle porphyrins: singlet and triplet excited state properties	202 (1993) 120
Redmond, D.B., see P.W. Fowler	202 (1993) 371
Rego, C.A., see J.W. Bevan	204 (1993) 551
Rehms, A.A. and P.R. Callis, Two-photon fluorescence excitation spectra of aromatic amino acids	208 (1993) 276
Reid, M.F., see P.A. Tanner	209 (1993) 539
Reid, S.A., J.T. Brandon and H. Reisler, State-specific photofragment yield spectroscopy of jet-cooled methyl nitrite	209 (1993) 22
Reimers, J.R., see J. Zeng	206 (1993) 318, 323
Reisler, H., see S.A. Reid	209 (1993) 22
Remacle, F., R.D. Levine and J.L. Kinsey, The determination of time cross correlation functions by inversion of Raman excitation profiles	205 (1993) 267
Remacle, F., J.C. Lorquet and R.D. Levine, Unimolecular dissociation of selectively excited polyatomic molecules	209 (1993) 315
Ren, W., Z. Liu and H. Ho, New formalism for the SCF- $\text{X}\alpha$ -SW model with application to large molecular systems or atomic clusters	201 (1993) 247
Renger, M., see H. Knöckel	208 (1993) 10
Renn, A., see M. Pirodda	208 (1993) 379
Rettig, W., see K.A. Al-Hassan	206 (1993) 25
Rettig, W., see R. Lapouyade	208 (1993) 48
Rettschnick, R.P.H., see J. Jortner	205 (1993) 451
Reuse, F., see S.N. Khanna	205 (1993) 248
Richard, S., see U. Schneider	210 (1993) 165
Richmann, M.K., T.O. Nelson and D.W. Setser, Two-photon studies of Xe_2 , $\text{Xe}\cdot\text{Ar}$, $\text{Xe}\cdot\text{CO}$ and $\text{Xe}\cdot\text{BrCCl}_3$ van der Waals molecules	210 (1993) 71
Ridley, T., see R.J. Donovan	205 (1993) 129; 207 (1993) 129
Riehl, J.-F., see T. Leininger	205 (1993) 301
Riga, J., see J. Delhalle	210 (1993) 21
Rinaldi, D., see V. Dillet	202 (1993) 18
Rios Leite, J.R., see O. Di Lorenzo-Filho	203 (1993) 325
Ritchie, G.L.D., see M.H. Coonan	202 (1993) 237
Ritze, H.-H., see V. Stert	204 (1993) 287
Ritze, H.-H., see W. Radloff	205 (1993) 171
Rivail, J.-L., see V. Dillet	202 (1993) 18
Robbe, J.M., see H. Lavendy	205 (1993) 456
Robbe, J.-M., M. Bencheikh and J.-P. Flament, Ab initio investigation of the ground state potential surfaces of He-NO^+ and Ar-NO^+	210 (1993) 170
Robbins, D.L., see J.S. Pilgrim	202 (1993) 203
Robbins, D.L., see C.S. Yeh	206 (1993) 509
Robles, E.S.J., see A.M. Ellis	201 (1993) 132
Robyr, P., see M. Tomaselli	205 (1993) 145

Roche, M., see I. Baraille	207 (1993) 203
Roco, J.M.M., see A. Medina	202 (1993) 364
Rodgers, D., see W. Kong	203 (1993) 497
Rodier, N., see V. Agafonov	208 (1993) 68
Rodriguez, G. and J.G. Eden, Dynamics of vibrational wave packets in the C $^1\Pi_u$ state of Cs ₂	205 (1993) 371
Rogers, J.R. and D.S. Marynick, Theoretical estimates of the η^6 bonding capability of buckminsterfullerene in transition metal complexes	205 (1993) 197
Rohlfing, C.M., see K. Raghavachari	208 (1993) 436
Rom, N., V. Ryaboy and N. Moiseyev, Thermal rate constants of multi-mode systems for the price of one: aziridine	204 (1993) 175
Román, E.S., see M.E. Daraio	204 (1993) 415
Romanoni, C., see A. Cybo-Ottone	208 (1993) 345
Romascán, J., see S.M. Ohline	207 (1993) 563
Roos, B.O., see R. González-Luque	204 (1993) 323
Rose, E.J., see F.G. Baglin	210 (1993) 84
Rosén, A., see D. Östling	202 (1993) 389
Roser, D. and M. Vala, A magnetic circular dichroism study of cobalt atoms in a xenon matrix	205 (1993) 6
Rosmus, P., see M. Brommer	206 (1993) 540
Rossky, P.J., see W.-S. Sheu	202 (1993) 186
Rösslein, M., see E. Kades	209 (1993) 275
Rozsak, S., An efficient procedure for calculations of interaction energy in large molecular systems	201 (1993) 33
Rozsak, S., M. Vijayakumar, K. Balasubramanian and W.S. Koski, A multireference configuration interaction study of photoelectron spectra of carbon tetrahalides	208 (1993) 225
Roth, E., see K. Kneipp	207 (1993) 450
Roth, S., see H.J. Byrne	204 (1993) 461
Rotman, S.R., see A. Eyal	206 (1993) 113
Rotomskis, R., V. Vaičaitis and A. Piskarskas, Time-resolved absorption spectroscopy of hematoporphyrin and its photoproducts	202 (1993) 233
Rowe, J.E., see G.K. Wertheim	202 (1993) 320; 206 (1993) 193
Rowntree, P., see M. Meinke	205 (1993) 213
Rubahn, H.-G., see K. Bammel	201 (1993) 101
Rubin, Yu.V., see Yu.P. Blagoy	203 (1993) 265
Rubio, A., see O.V. Gritsenko	205 (1993) 348
Rubio, J., see À. Povill	209 (1993) 126
Rubtsov, I.V., see V.A. Nadtochenko	208 (1993) 431
Rüede, R., H. Troxler, Ch. Beglinger and M. Jungen, The dissociation energies of the positive ions NH ₃ ⁺ , NF ₃ ⁺ , PH ₃ ⁺ , PF ₃ ⁺ and PCl ₃ ⁺	203 (1993) 477
Rugar, B., see D.P. Shelton	201 (1993) 364
Ruhaltinger, T., see M. Fárnik	206 (1993) 376
Rühle, W.W., see U. Strauss	202 (1993) 415
Rühle, W.W., see H.J. Byrne	204 (1993) 461
Ruiz, J., see J. Luque	202 (1993) 179
Ruiz-Estrada, H., see G. Cruz de León	207 (1993) 294
Ruocco, G., see U. Balucani	209 (1993) 408

Master index to volumes 201-210

Ruoff, R.S., Y. Wang and D. Tománek, Lanthanide- and actinide-based fullerite compounds: potential A_xC_{60} superconductors?	203 (1993) 438
Ruoff, R.S., see Y. Wang	208 (1993) 79
Ruoff, R.S., Prediction of enthalpies of sublimation of fullerenes from first-order molecular connectivity theory	208 (1993) 256
Ruppert, L., see I. Barnes	203 (1993) 295
Russon, L.M., S.A. Heidecke, M.K. Birke, J. Conceicao, P.B. Armentrout and M.D. Morse, The bond energy of Co_2^+	204 (1993) 235
Ruud, K., see M. Jaszunski	204 (1993) 608
Ryaboy, V., see N. Rom	204 (1993) 175
Ryan, R.P., see P.W. Fowler	202 (1993) 371

- Saathoff, H. and R. Zellner, LIF detection of the CF_3O radical and kinetics of its reactions with CH_4 and C_2H_6 206 (1993) 349
- Sacchi, M., see L. Soriano 208 (1993) 460
- Sáez Rábanos, V., see F.J. Aoiz 204 (1993) 359
- Safonov, A.A., see K.B. Shelimov 201 (1993) 84
- Sahm, D.K. and D.L. Thompson, Semiclassical calculation of state-selective electronic predissociation rate constants 205 (1993) 241
- Sahm, D.K. and D.L. Thompson, Comparison of trajectory surface-hopping and Monte Carlo phase-space theory predissociation rate constants for N_2O 210 (1993) 175
- Sahni, V., see K.D. Sen 205 (1993) 313
- Saiki, K., see M. Sakurai 208 (1993) 425
- Saito, K., see O. Takahashi 207 (1993) 379
- Saito, N., A. Kudo, S. Ohshima, I. Oonishi and T. Sakata, Electroluminescence of Al_2O_3 electrode modified with fine particulate semiconductors 208 (1993) 39
- Saito, R., G. Dresselhaus and M.S. Dresselhaus, Multiplet structures of C_{60} ions 210 (1993) 159
- Saito, S., see Y. Wang 205 (1993) 521
- Saito, Y., T. Yoshikawa, M. Inagaki, M. Tomita and T. Hayashi, Growth and structure of graphitic tubules and polyhedral particles in arc-discharge 204 (1993) 277
- Saito, Y., T. Yoshikawa, M. Okuda, M. Ohkohchi, Y. Ando, A. Kasuya and Y. Nishina, Synthesis and electron-beam incision of carbon nanocapsules encaging YC_2 209 (1993) 72
- Sakaguchi, Y., see H. Murai 203 (1993) 482
- Sakai, H., A. Itaya, H. Masuhara, K. Sasaki and S. Kawata, Fluorescence dynamics of poly(N-vinylcarbazole) in fluid solution. Multivariate analysis of time-resolved fluorescence spectra 208 (1993) 283
- Sakata, T., see S. Kohtani 206 (1993) 166
- Sakata, T., see N. Saito 208 (1993) 39
- Saksena, M.D., see R. Venkatasubramanian 210 (1993) 367
- Sakurai, M., H. Tada, K. Saiki, A. Koma, H. Funasaka and Y. Kishimoto, Epitaxial growth of C_{60} and C_{70} films on GaSe (0001) and MoS_2 (0001) surfaces 208 (1993) 425
- Salahub, D.R., see V.G. Malkin 204 (1993) 80, 87
- Salikhov, K.M., Creation of spin coherent states in the course of chemical reactions 201 (1993) 261
- Salsich, T., see G.D. Hager 204 (1993) 420
- Salter, R.H., see R.A. Dressler 204 (1993) 111
- Salvi, P.R., see G. Marconi 202 (1993) 335
- Samanta, A., K.R. Gopidas and P.K. Das, Facile electron transfer from aromatic triplets to polyaryl carbocations 204 (1993) 269
- Sambasiva Rao, P., see P.V. Lalitha 201 (1993) 559
- Sampoli, M., see U. Balucani 209 (1993) 408
- Samuni, U., see R. Fraenkel 203 (1993) 523
- Sanche, L., see M. Meinke 205 (1993) 213
- Sanche, L., see M.A. Huels 210 (1993) 340
- Sanchez, C., see B. Lebeau 206 (1993) 15
- Sanchez, C., see T. Fournier 208 (1993) 101
- Sánchez de Merás, A., see I. García Cuesta 205 (1993) 484
- San-Fabián, J., J. Guilleme, E. Díez, P. Lazzeretti, M. Malagoli and R. Zanasi, Vicinal proton-proton coupling constants. Basis set dependence in SCF ab initio calculations 206 (1993) 253
- Sannigrahi, A.B., P.K. Nandi and P. von R. Schleyer, Ab initio theoretical study of the electronic structure, stability and bonding of dialkali halide cations 204 (1993) 73

Santoro, G., see G.P. Brivio	208 (1993) 93
Sanz, J.M., see L. Soriano	208 (1993) 460
Sapre, A.V., see H.N. Ghosh	203 (1993) 5
Sarkar, B. and K. Bhattacharyya, A simple method of accelerating monotonic sequences	204 (1993) 211
Sarkar, N., see K. Das	204 (1993) 393
Sarkisov, O.M., see M.G. Bryukov	208 (1993) 392
Sarpal, R.S., see M. Belletête	201 (1993) 145
Sasaki, K., see H. Sakai	208 (1993) 283
Sasaki, K., see K. Kamada	210 (1993) 89
Sasaki, T. and N. Mikami, Trapped ion photodissociation spectroscopy. Photodissociation of <i>p</i> -dichlorobenzene cation	209 (1993) 379
Sastre, R., see F. Amat-Guerri	209 (1993) 352
Sastry, S., F. Sciortino and H.E. Stanley, Density anomalies and reentrant spinodal behavior	207 (1993) 275
Sathyamurthy, N., see N. Balakrishnan	201 (1993) 294
Sathyamurthy, N., see C. Kalyanaraman	209 (1993) 52
Sato, N., see T. Mochida	210 (1993) 389
Sato, S., see N. Mikami	202 (1993) 431
Satyapal, S., S. Tasaki and R. Bersohn, Photodissociation of chloroaromatic compounds: Cl ⁺ /Cl ratios	203 (1993) 349
Sauer, T., see W. Janke	201 (1993) 499
Sausa, R.C., see M.J. McQuaid	210 (1993) 350
Sauter, B. and C. Bräuchle, Non-Lorentzian hole-burning line shapes in dye-surface systems	204 (1993) 157
Savina, M.R., L.L. Lohr and A.H. Francis, A particle-on-a-sphere model for C ₆₀	205 (1993) 200
Sayós, R., see M. González	204 (1993) 578
Scarton, M.G., see T. Tsukuda	201 (1993) 351
Schaack, G., see R. Heidler	209 (1993) 299
Schaefer III, H.F., see Z. Palágyi	203 (1993) 195
Schaefer III, H.F., see T.P. Hamilton	208 (1993) 106
Schallmoser, G., B.E. Wurfel, A. Thoma, N. Caspary and V.E. Bondybey, FTIR absorption spectra of ClCS in an argon matrix	201 (1993) 528
Schatz, G.C., S. Florance, T.J. Lee and C.W. Bauschlicher Jr., Ab initio potential energy surface for IHI ⁻ . Simulation of IHI ⁻ photodetachment spectra	202 (1993) 495
Schatz, G.C., see M.A. Vincent	203 (1993) 415
Schatz, G.C., see J.N.L. Connor	206 (1993) 119
Scheier, P., see M. Lezius	203 (1993) 232
Scheiner, S., see X. Duan	204 (1993) 36
Schek, I., see U. Even	202 (1993) 303
Schellenberg, P., see J. Kikas	207 (1993) 143
Scheller, M.K., see T. Sommerfeld	209 (1993) 216
Scheuchenpflug, J., see A. Stangassinger	209 (1993) 372
Schilling, B., see M. Lewerenz	206 (1993) 381
Schlachta, R., see G.M. Lask	205 (1993) 31
Schlag, E.W., see B. Fain	202 (1993) 357
Schlag, E.W., see J. Grotemeyer	209 (1993) 499
Schleyer, P. von R., see A.B. Sannigrahi	204 (1993) 73
Schleyer, P. von R., see M.N. Glukhovtsev	204 (1993) 394; 205 (1993) 529; 209 (1993) 207
Schmelcher, P. and L.S. Cederbaum, Two-body effects of the hydrogen atom in crossed electric and magnetic fields	208 (1993) 548

Schmidt, A.B., Ion binding by weakly charged polyions in unsymmetrical diluted electrolytes	205 (1993) 587
Schmidt, C., see K. Dietz	207 (1993) 281
Schmidt, R., see J. Bendig	202 (1993) 535
Schmidt, R., see U. Katscher	205 (1993) 75
Schmitt, U., see M. Quack	208 (1993) 446
Schmude Jr., R.W., see K.A. Gingerich	207 (1993) 23
Schneider, U., S. Richard, M.M. Kappes and R. Ahlrichs, Ab initio ^{13}C NMR shifts of several C_{84} isomers	210 (1993) 165
Schoemaker, D., see J. De Kinder	203 (1993) 12
Scholz, G., see L.A. Curtiss	205 (1993) 550
Scholz, G., The vapour phase complex HF-FeF_3 . An ab initio molecular orbital study	206 (1993) 555
Schönhoff, M., see S.P. Palto	202 (1993) 308
Schroeder, J., J. Troe and P. Vöhringer, Pressure dependence of solvent-induced barrier shifts in the photoisomerization of trans-stilbene	203 (1993) 255
Schuddeboom, W., see J.M. Warman	210 (1993) 397
Schulte, J., see M.C. Böhm	202 (1993) 37
Schulze, W., see I. Rabin	201 (1993) 265
Schwartz, B.J., J.C. King, J.Z. Zhang and C.B. Harris, Direct femtosecond measurements of single collision dominated geminate recombination times of small molecules in liquids	203 (1993) 503
Schwarz, H., see F. Grandinetti	204 (1993) 53
Schwarz, H., see M. Iraqi	205 (1993) 183
Schwarz, H., see J. Hrušák	205 (1993) 187
Schweig, A., see J.G.G. Simon	201 (1993) 377
Schweighofer, K.J. and I. Benjamin, Dynamics of ion desorption from the liquid-vapor interface of water	202 (1993) 379
Schwenke, D.W., S.L. Mielke, G.J. Tawa, R.S. Friedman, P. Halvick and D.G. Truhlar, Converged quantum-mechanical calculations of electronic-to-vibrational, rotational energy transfer probabilities in a system with a conical intersection	203 (1993) 565
Schwentner, N., see M. Chergui	201 (1993) 187
Schwenz, R.W., J.V. Gilbert and R.D. Coombe, $\text{NCl}(a^1\Delta)$ and $\text{I}(5^2\text{P}_{1/2})$ production in a $\text{D/NCl}_3/\text{HI}$ transverse flow reactor	207 (1993) 526
Sciortino, F., see S. Sastry	207 (1993) 275
Scoles, G., see X. Yang	204 (1993) 145
Scotoni, M., see D. Bassi	207 (1993) 167
Scott, M.A., see T.P.J. Han	208 (1993) 63
Scott, T.C., J.F. Babb, A. Dalgarno and J.D. Morgan III, Resolution of a paradox in the calculation of exchange forces for H_2^+	203 (1993) 175
Scripter, C., E. Augustyniak and J. Borysow, Direct spectroscopic detection of $\text{A}'^5\Sigma_g^+$ state of N_2	201 (1993) 194
Scuseria, G.E., see L.S. Wang	207 (1993) 354
Sebastian, K.L., see N. Chakravarti	204 (1993) 496
Seetula, J., see M.G. Bryukov	208 (1993) 392
Segall, J., Y. Wen, R. Singer, C. Wittig, A. García-Vela and R.B. Gerber, Evidence for a cage effect in the UV photolysis of HBr in Ar-HBr . Theoretical and experimental results	207 (1993) 504
Sehested, J. and O.J. Nielsen, Absolute rate constants for the reaction of CF_3O_2 and CF_3O radicals with NO at 295 K	206 (1993) 369
Seibert, J.W.G., see J. Koput	204 (1993) 183

Seidl, P.R., see J.W.D.M. Carneiro	202 (1993) 278
Seidner, L., W. Domcke and W. von Niessen, $\tilde{X}^2A_g-\tilde{A}^2B_{1g}$ conical intersection in the pyrazine cation and its effect on the photoelectron spectrum	205 (1993) 117
Seixas de Melo, J. and A.L. Maçanita, Three interconverting excited species: experimental study and solution of the general photokinetic triangle by time-resolved fluorescence	204 (1993) 556
Selmani, A., F. Elfeninat and M. Hliwa, Electronic and geometric structures of the high- and low-spin multiplets of the $Cr(C_6H_6) \pi$ complex	201 (1993) 416
Selmani, A., see A. Ouhlal	202 (1993) 51
Seminario, J.M., Energetics using DFT: comparisons to precise ab initio and experiment	206 (1993) 547
Seminario, J.M., see P. Politzer	207 (1993) 27
Sen, K.D., M. Slamet and V. Sahni, Atomic shell structure in Hartree-Fock theory	205 (1993) 313
Sepiol, J., see M. Pirotta	208 (1993) 379
Seshadri, R., see V. Varma	203 (1993) 545
Seshadri, R., C.N.R. Rao, H. Pal, T. Mukherjee and J.P. Mittal, Interaction of C_{60} and C_{70} with aromatic amines in the ground and excited states. Evidence for fullerene-benzene interaction in the ground state	205 (1993) 395
Seta, P., see R.V. Bensasson	210 (1993) 141
Setser, D.W., see E. Arunan	207 (1993) 81
Setser, D.W., see D. Zhong	207 (1993) 555
Setser, D.W., see M.K. Richmann	210 (1993) 71
Setser, D.W., see Y. Zhao	210 (1993) 362
Setton, R., see A. Messaoudi	202 (1993) 506
Ševčík, P., see J. Hlaváčová	201 (1993) 242
Sewell, T.D., C.C. Chambers, D.L. Thompson and R.D. Levine, Power spectral study of the classical vibrational dynamics of RDX	208 (1993) 125
Seydoux, R., see R.K. Mazitov	201 (1993) 543
Sgamellotti, A., see K. Zähringer	206 (1993) 247
Shafirovich, V.Ya., E.E. Batova and P.P. Levin, Cyclodextrin complexes of zinc porphyrin-tetraviologen supramolecule. Magnetic field effect on the recombination kinetics of their triplet radical ion pair states	210 (1993) 101
Shaikh, W., see D.J. McGarvey	202 (1993) 528
Shalashilin, D.V., A.V. Michtchenko and F. Lara, The quasiclassical approximation in DeLos-Thorson close-coupled equations for inelastic scattering	207 (1993) 250
Shank, C.V., see C.J. Bardeen	203 (1993) 535
Shao, Y., see T.W. Zerda	209 (1993) 247
Shao, Y.H., see J. Liu	210 (1993) 149
Shapiro, M. and P. Brumer, Weak field optimal control over product yields. The pump-dump scenario	208 (1993) 193
Shapley, J.R., see Y. Zhang	205 (1993) 508
Sharafeddin, O. and J.Z.H. Zhang, A DVR based time-dependent wave packet treatment for reactive scattering	204 (1993) 190
She, Y., see Y. Zheng	202 (1993) 148
Shelimov, K.B., A.A. Safonov and A.A. Bagatur'yants, Ab initio calculations of an M center on the $AgBr(100)$ surface. Formation, electronic structure and spectrum of a primary Ag_2 cluster	201 (1993) 84
Shelton, D.P. and B. Rugar, The Kerr effect in hydrogen	201 (1993) 364
Shen, G., see D. Xu	210 (1993) 315

- Shestakov, A.F., see D.V. Ponomarenko 210 (1993) 269
- Sheu, W.-S. and P.J. Rossky, The electronic dynamics of photoexcited aqueous iodide 202 (1993) 186
- Shi, Y., W.M. McClain and R.A. Harris, An extension of the Mueller scattering matrix to nonlinear light scattering 205 (1993) 91
- Shiang, K.-D., Interaction potentials for a lithium atom chemisorbed on a LiF(001) surface 209 (1993) 331
- Shibuya, K., see Y. Kajii 204 (1993) 283
- Shida, T., see T. Kato 205 (1993) 405
- Shida, T., see H. Kawashima 207 (1993) 257
- Shimakawa, Y., see M. Kosaka 203 (1993) 429
- Shin, E., J. Park, M. Lee, D. Kim, Y.D. Suh, S.I. Yang, S.M. Jin and S.K. Kim, Temperature-dependent photoluminescence study of C₆₀ and C₇₀ 209 (1993) 427
- Shin, H.K., Negative temperature dependence of vibrational energy transfer in H₂O-H₂O collisions 202 (1993) 260
- Shin, K.S., see H.-X. Yang 207 (1993) 69
- Shirley, D.A., see B. Niu 201 (1993) 212, 217
- Shirley, D.A., see Y. Zheng 203 (1993) 114; 206 (1993) 161
- Shiromaru, H., see T. Wakabayashi 201 (1993) 470
- Shiromaru, H., see N. Watanabe 207 (1993) 493
- Shizuka, H., see M. Yamaji 202 (1993) 191
- Shkrob, I.A., M.C. Depew and J.K.S. Wan, Time-resolved electron spin resonance study of radical species derived from naturally occurring carbohydrates 202 (1993) 133
- Shkrob, I.A., A violation of the magnetic equivalence of nuclei in chemically induced dynamic nuclear polarization spectroscopy 210 (1993) 432
- Shrivastava, I.H., see S.R. Gadre 204 (1993) 350
- Shushin, A.I., The relaxational mechanism of net CIDEP generation in triplet-radical quenching 208 (1993) 173
- Shuto, Y., see N. Ooba 207 (1993) 468
- Sidebottom, H.W., see C. Kelly 207 (1993) 498
- Siegbahn, P.E.M., A comparison of the bonding in the second-row transition-metal oxides and carbenes 201 (1993) 15
- Siegbahn, P.E.M., The Ziegler-Natta olefin insertion reaction into a metal-alkyl bond for second-row transition metal atoms 205 (1993) 290
- Sikorski, M., W. Augustyniak, I.V. Khmelinski, V.V. Korolev and N.M. Bazhin, Deactivation of the lowest triplet state of 4-H-1-benzopyran-4-thione in different solvents 209 (1993) 403
- Silla, E., see I. Tuñón 203 (1993) 289
- Šiller, L., J.F. Wendelken, K.M. Hock and R.E. Palmer, Resonance electron scattering by physisorbed and chemisorbed O₂ on Pt(111) 210 (1993) 15
- Sillescu, A., E. Ratajczak and P. Pagsberg, Kinetics of the reactions H+C₂H₄→C₂H₅, H+C₂H₅→2CH₃ and CH₃+C₂H₅→products studied by pulse radiolysis combined with infrared diode laser spectroscopy 201 (1993) 171
- Sillescu, A., see J.T. Jodkowski 203 (1993) 490
- Sillescu, A., E. Ratajczak and P. Pagsberg, Kinetics of the reactions H+C₂H₄→C₂H₅, H+C₂H₅→2CH₃ and CH₃+C₂H₂→products studied by pulse radiolysis combined with infrared diode laser spectroscopy (Chem. Phys. Letters 201 (1993) 171). Erratum 203 (1993) 613
- Simon, A., see U. Strauss 202 (1993) 415
- Simon, J.G.G. and A. Schweig, ¹H and ¹³C NMR spectra of benzocyclopropanone in liquid solutions at 193 K 201 (1993) 377

Simons, J., see J. Nichols	210 (1993) 471
Simons, J.P., see J. McCombie	206 (1993) 37
Simons, J.P., see M. Ben-Nun	210 (1993) 423
Simpson, C.J.S.M., see G.J. Wilson	207 (1993) 521; 210 (1993) 1
Simpson, C.J.S.M., K.R. Yoxall, A.S. Solodukhin, A. Takami, J.M. Curry and A.W. Parker, Energy transfer between adsorbed molecules on a dielectric surface following ultraviolet excitation	210 (1993) 5
Singer, R., see J. Segall	207 (1993) 504
Singer, R.J., see J.A. Howard	204 (1993) 128
Singh, M., see R. Venkatasubramanian	210 (1993) 367
Singh, R.K., B.P. Asthana and H.D. Bist, Study of the dynamics of phase transition in NH ₄ SCN by a precise Raman linewidth and frequency shift measurement	209 (1993) 390
Sinha, H.K., O.K. Abou-Zied and R.P. Steer, Ground and excited state dipole moments of pyranthione and xanthione by the electro-optic method	201 (1993) 433
Sizaret, P.-Y., see V. Agafonov	208 (1993) 68
Skipper, N.T., Computer simulation of methane-water solutions. Evidence for a temper- ature-dependent hydrophobic attraction	207 (1993) 424
Skourtis, S.S. and J.N. Onuchic, Effective two-state systems in bridge-mediated electron transfer. A Green function analysis	209 (1993) 171
Slamet, M., see K.D. Sen	205 (1993) 313
Slanina, Z., J.M.L. Martin, J.-P. François and R. Gijbels, The structure, energetics and harmonic vibrations of B ₃ N	201 (1993) 54
Slavin, V.V., see Yu.P. Blagoy	203 (1993) 265
Slyusarchuk, O.N., see V.I. Danilov	209 (1993) 519
Small, G.J., see R. Jankowiak	207 (1993) 436
Small, G.J., see W.-H. Kim	207 (1993) 443
Smalley, R.E., see L.S. Wang	207 (1993) 354
Smith, A.M., J. Agreiter, C. Engel and V.E. Bondybey, FT-IR studies of optically pumped C ₃ in rare gas matrices. The vibrational and electronic absorption spectrum of the $\tilde{a}^3\Pi_u$ state	207 (1993) 531
Smith, B.J., Hexalithiobenzene: beauty is in the eye of the beholder	207 (1993) 403
Smith, D., see P. Hobza	208 (1993) 497
Smith, D.A., see M.E. Mura	203 (1993) 578
Smyth, K.C., see J.E. Harrington	202 (1993) 196
Snyder, E.M., see Y. Yamada	203 (1993) 330
Sobolewski, A.L., see W. Domcke	203 (1993) 220
Sodupe, M. and C.W. Bauschlicher Jr., The bonding in the low-lying states of MgO ₂ ⁺	203 (1993) 215
Sodupe, M. and C.W. Bauschlicher Jr., The bonding in FeC ₅ H ₅ ⁺	207 (1993) 19
Softley, T.P., see F. Merkt	202 (1993) 153
Sokolovski, D., see J.N.L. Connor	206 (1993) 119
Solodukhin, A.S., see G.J. Wilson	207 (1993) 521
Solodukhin, A.S., see C.J.S.M. Simpson	210 (1993) 5
Solomon, T., see A. Neumann	201 (1993) 108
Sommerfeld, T., M.K. Scheller and L.S. Cederbaum, The structure of small doubly neg- ative carbon clusters	209 (1993) 216
Sondermann, F., see F.P. Capetanakis	206 (1993) 361
Song, Q., see C. Wan	210 (1993) 94

Song, X. and J.F. Endicott, Excited state energy of ($^3\text{MLCT}$)Ru(bpy) $_3^{2+}$ by time-resolved thermal lens and photoacoustic methods in aqueous solutions	204 (1993) 400
Sood, A.K., see V. Varma	203 (1993) 545
Soriano, L., M. Abbate, J. Vogel, J.C. Fuggle, A. Fernández, A.R. González-Elipe, M. Sacchi and J.M. Sanz, The electronic structure of mesoscopic NiO particles	208 (1993) 460
Sosa, C., see K. Raghavachari	209 (1993) 223
Soto, M.M., see J.W.D.M. Carneiro	202 (1993) 278
Spadacini, R., see R. Ferrando	202 (1993) 248
Spiegelmann, F., see A.R. Allouche	204 (1993) 343
Spohr, E., A computer simulation study of iodide ion solvation in the vicinity of a liquid water/metal interface	207 (1993) 214
Spycher, R.M., see P.M. King	203 (1993) 88
Staab, H.A., see F. Pöllinger	209 (1993) 251
Stace, A.J., see J.F. Winkel	201 (1993) 569
Stace, A.J., see C.A. Woodward	206 (1993) 49
Staemmler, V., see A. Freitag	210 (1993) 10
Stafford, U., K.A. Gray, P.V. Kamat and A. Varma, An in situ diffuse reflectance FTIR investigation of photocatalytic degradation of 4-chlorophenol on a TiO $_2$ powder surface	205 (1993) 55
Stafström, S., see J. Fagerström	203 (1993) 81
Staib, A. and J.T. Hynes, Vibrational predissociation in hydrogen-bonded OH...O complexes via OH stretch-OO stretch energy transfer	204 (1993) 197
Staib, A. and W. Domcke, Vibronic coupling in the pE" Rydberg series of NH $_3$	204 (1993) 505
Stangassinger, A., J. Scheuchenpflug, T. Prinz and V.E. Bondybey, Spectroscopy of the GaAr, GaKr and GaXe X \rightarrow B electronic transitions	209 (1993) 372
Stanley, H.E., see S. Sastry	207 (1993) 275
Stanton, J.F., see D. Cremer	209 (1993) 547
Steer, R.P., see H.K. Sinha	201 (1993) 433
Steer, R.P., see D. Tittelbach-Helmrich	209 (1993) 464
Stegeman, G., see M. Cha	202 (1993) 44
Stegmann, R., see A.W. Ehlers	208 (1993) 111
Stegmann, R., see A. Höllwarth	208 (1993) 237
Steiner, E., see P.W. Fowler	203 (1993) 189
Stepanov, E.V., see A.V. Eletskii	209 (1993) 525
Steren, C.A., P.R. Levstein, H. van Willigen, H. Linschitz and L. Biczok, FT-EPR study of triplet state C $_{60}$. Spin dynamics and electron transfer quenching	204 (1993) 23
Sterk, H., see R. Konrat	203 (1993) 75
Stert, V., W. Radloff, H.-H. Ritze and Th. Freudenberg, Resonant two-photon ionization spectroscopy of small benzene-(SF $_6$) $_m$ clusters	204 (1993) 287
Stert, V., see W. Radloff	205 (1993) 171
Stevens, B., C.J. Biver III and D.-C. Yuan, Dual fluorescence of 1-nitro, 4"-amino, <i>p</i> -terphenyl: origin and selective quenching	205 (1993) 440
Stewart, B., Ligand polarisability derivatives and anisotropies in the theory of f-f vibronic intensities	206 (1993) 106
Stewart, J.J.P., see V.I. Danilov	209 (1993) 519
Stolte, S., see C.A. Taatjes	203 (1993) 363
Stolte, S., see P.F. Levelt	210 (1993) 307
Strauss, U., N. Perchenek, W.W. Rühle, H.J. Queisser and A. Simon, Excited singlet states of molybdenum chloride clusters	202 (1993) 415

Strempel, J., see M. Ganz	207 (1993) 110
Strobel, A., see I. Fischer	202 (1993) 542
Strobel, H., see N. Holl	205 (1993) 25
Stuhl, F., see F.P. Capetanakis	206 (1993) 361
Stuhl, F., see Ch. Kassner	208 (1993) 27
Stuhl, F., see S. Höser	208 (1993) 399
Su, C.-X., D.A. Hales and P.B. Armentrout, The bond energies of Cr_2 and Cr_2^+	201 (1993) 199
Su, S. and M.S. Gordon, Insertion of silylene and dimethylsilylene into water	204 (1993) 306
Subbaswamy, K.R., see M. Menon	201 (1993) 321
Sublemontier, O., see A. Lallement	204 (1993) 440
Subra, R., see V. Barone	205 (1993) 324
Subramanian, C., see F.J. Kumar	206 (1993) 415
Subramanian, G. and E.D. Jemmis, Structure and stabilities of the isomers of SiB_2H_4 (Chem. Phys. Letters 200 (1992) 567). Erratum	204 (1993) 393
Suezawa, M., see A. Watanabe	207 (1993) 132
Suga, T., A. Furusawa and K. Uchikawa, Photochemical hole burning by photoinduced electron transfer. Effects of sacrificially consumable molecules	210 (1993) 411
Sugawara, T., see T. Mochida	210 (1993) 389
Suh, Y.D., see E. Shin	209 (1993) 427
Suhm, M.A., see M. Quack	208 (1993) 446
Suits, A.G., see G. Hall	203 (1993) 277
Sukhorukov, V.L., see A.G. Kochur	208 (1993) 541
Sukhorukov, V.L., see S.A. Novikov	208 (1993) 545
Sumino, K., see A. Watanabe	207 (1993) 132
Sun, J., see J. Li	203 (1993) 560
Sun, L. and H. Görner, Trans→cis photoisomerization of 1-(9-anthryl)-2-(4-R-phenyl)ethylene, R: CH_3 and OCH_3	208 (1993) 43
Sun, Y.-P., C.E. Bunker and N.B. Hamilton, Py scale in vapor phase and in supercritical carbon dioxide. Evidence in support of a three-density-region model for solvation in supercritical fluids	210 (1993) 111
Suter, U.W., see M. Tomaselli	205 (1993) 145
Suzuka, I., see Y. Nakagawa	208 (1993) 453
Suzuki, K., see H. Ito	208 (1993) 328
Svensson, C., see S.-Å. Lindgren	205 (1993) 391
Svensson, S. and H. Ågren, Do shape resonances exist in core electron shake spectra of free molecules?	205 (1993) 387
Swang, O., K. Fægri Jr. and O. Gropen, Theoretical cluster model studies of bimetallic heterogeneous catalysis: dissociation of hydrogen on a rhenium-doped nickel cluster	207 (1993) 397
Syage, J.A., Measurement of cluster reorganization by time-resolved photoelectron spectroscopy	202 (1993) 227
Symons, M.C.R., Comment on "The evolution between slow and rapid chemical exchange processes in a liquid binary mixture"	208 (1993) 555
Szczepanski, J., C. Chapo and M. Vala, Visible and infrared spectra of matrix-isolated perylene cations	205 (1993) 434
Szmacinski, H., see J.R. Lakowicz	206 (1993) 455
Szmytkowski, C. and A.M. Krzysztofowicz, Electron scattering from CH_3I . Total cross section measurements	209 (1993) 474

Master index to volumes 201-210

Sztucki, J., Intensity of electric quadrupole transitions of metal ions in crystals	203 (1993) 383
Szwarc, H., see V. Agafonov	208 (1993) 68
Szwarc, H., see R. Céolin	208 (1993) 259

Taatjes, C.A., M.H.M. Janssen and S. Stolte, Dynamical information in angular distributions of fragments from photolysis of oriented molecules	203 (1993) 363
Tachibana, A., S. Ishikawa and T. Yamabe, Vibronic attractive interaction for superconductivity in a local model of C ₆₀	201 (1993) 315
Tachiya, M., An alternative interpretation of Onsager's inverted snowball effect of electron solvation	203 (1993) 164
Tada, H., see M. Sakurai	208 (1993) 425
Taddei, F., see R. Benassi	204 (1993) 595
Tadjikov, B.M., O.A. Anisimov and Yu.N. Molin, OD ESR line inversion in viscous solution. Indication of ST ₋ mechanism of radical ion pair recombination	208 (1993) 32
Taft, C.A., see J.W.D.M. Carneiro	202 (1993) 278
Takada, K., see K. Yamaguchi	210 (1993) 201
Takada, T., see M. Tomonari	203 (1993) 603
Takada, Y., see A. Hirabayashi	204 (1993) 152
Takahashi, H., see T. Yuzawa	202 (1993) 221
Takahashi, H., see H. Hiura	202 (1993) 509
Takahashi, I., see H. Itagaki	205 (1993) 446
Takahashi, J., J. Tsuchiya and K. Kawasaki, Dependence of persistent spectral hole-burning efficiency on free energy release for organic donor-acceptor systems	209 (1993) 479
Takahashi, O., K. Saito, S. Yamamoto and N. Nishimura, A theoretical study of cadmium-ethylenediamine and -ammonia exciplexes. Comparison with experiments	207 (1993) 379
Takaichi, S., see M. Mimuro	204 (1993) 101
Takami, A., see C.J.S.M. Simpson	210 (1993) 5
Takami, M., see Y. Matsuo	201 (1993) 341
Takatsuka, K., Concept of phase-space large-amplitude motion. A classical study	204 (1993) 491
Takayanagi, M., see T. Kono	201 (1993) 166
Takayanagi, M. and I. Hanazaki, Observation of intermolecular vibrational modes in the 2,3-dihydrobenzofuran dimer	208 (1993) 5
Takeda, K., see Y. Kajii	204 (1993) 283
Takegoshi, K. and K. Hikichi, Determination of the ¹⁴ N quadrupole coupling tensor of an ℓ -alanine single crystal by overtone NMR	206 (1993) 450
Takeo, H., see T. Nakanaga	206 (1993) 73
Takezoe, H., see K. Kajikawa	205 (1993) 225
Tamai, N., see M. Yanagimachi	201 (1993) 115
Tamura, M., see L.P. Le	206 (1993) 405
Tan, K.H., see Z.F. Liu	203 (1993) 337
Tan, X.-Q. and D.W. Pratt, The S ₀ and S ₁ methyl group torsional barriers in 2-methyl-1-naphthol depend upon the orientation of the OH group	207 (1993) 510
Tanaka, H., The stability of Xe and CF ₄ clathrate hydrates. Vibrational frequency modulation and cage distortion	202 (1993) 345
Tanaka, K., M. Okada, K. Okahara and T. Yamabe, Electronic structure of C ₇₀	202 (1993) 394
Tanaka, K., see K. Yoshizawa	202 (1993) 483
Tanaka, K., see M. Okada	209 (1993) 91
Tanaka, K., see K. Yamaguchi	210 (1993) 201
Tanaka, T., see M. Yamaji	202 (1993) 191
Tang, A., Q. Li, C. Liu and J. Li, Symmetrical clusters of carbon and boron	201 (1993) 465
Tang, K.T., see G.L. Guo	203 (1993) 583

- Tanigaki, K., see H. Hiura 202 (1993) 509
- Tanigaki, K., I. Hirosawa, T.W. Ebbesen, J. Mizuki and S. Kuroshima, Structure and properties of $\text{Na}_x\text{Cs}_y\text{C}_{60}$ superconductors 203 (1993) 33
- Tanigaki, K., see M. Kosaka 203 (1993) 429
- Tanigaki, K., see T.W. Ebbesen 209 (1993) 83
- Taniguchi, S., see S. Okada 209 (1993) 161
- Tanimoto, M., see F. Hirota 208 (1993) 115
- Tanner, P.A., M. Chua and M.F. Reid, Energy transfer by magnetic dipole-magnetic dipole interaction 209 (1993) 539
- Tannor, D.J., see D.E. Weeks 207 (1993) 301
- Tao, F.-M., The counterpoise method and bond functions in molecular dissociation energy calculations 206 (1993) 560
- Tarantelli, F., see K. Zähringer 206 (1993) 247
- Tarchi, D., see I. Bertini 203 (1993) 445
- Tarroni, R., P. Palmieri, M.M. Hühn and N.C. Handy, The harmonic and the anharmonic force field of FSN 207 (1993) 195
- Tasaki, S., see S. Satyapal 203 (1993) 349
- Tasumi, M., see H. Okamoto 202 (1993) 161; 206 (1993) 388
- Tawa, G.J., see D.W. Schwenke 203 (1993) 565
- Taylor, C.A. and P. Marshall, A discharge-flow/chemiluminescence study of the reaction $\text{O} + \text{Si}_2\text{H}_6$ at room temperature 205 (1993) 493
- Taylor, P.R., see J.M.L. Martin 205 (1993) 535; 209 (1993) 143
- Taylor, R., see P.R. Birkett 205 (1993) 399
- Tegze, M., see K. Kamarás 202 (1993) 325
- Teitelbaum, H., Non-equilibrium kinetics of bimolecular reactions. Effect of anharmonicity on the rate law 202 (1993) 242
- Temme, F.P., $\mathcal{S}_{28} \rightarrow \mathcal{S}_{28} \downarrow T_d$ subduction within $\text{SU}(2) \times \mathcal{S}_{28}$ spin algebras. Semi-combinatorial aspects of NMR spin clusters of $[\text{C}^{13}]_{28}$ and $[\text{C}^{13}]_{28}[\text{H}]_4$ fullerenes 207 (1993) 236
- Tennyson, J., see C.R. Le Sueur 206 (1993) 429
- Terao, T., see D. Kuwahara 204 (1993) 533
- Terasaki, A., see T. Tsukuda 201 (1993) 351
- Tercel, M., see F. Pöllinger 209 (1993) 251
- Tero-Kubota, S., see A. Katsuki 209 (1993) 258
- Terrones, H. and A.L. Mackay, Triply periodic minimal surfaces decorated with curved graphite 207 (1993) 45
- Thakkar, A.J., see E.F. Archibong 201 (1993) 485
- Thakkar, A.J., see R.E. Hoffmeyer 207 (1993) 407
- Thalweiser, R., see T. Baumert 209 (1993) 29
- Than-Trong, N., P.Y. Timbrell and R.N. Lamb, An XPS study of polyimide film formation from the vapour deposition polymerisation of pyromellitic diimide (PMDI) and 4,4'-oxydianiline (ODA) 205 (1993) 219
- Theodorakopoulos, G., I.D. Petsalakis and C.A. Nicolaides, Diabatic potentials for the $1^1\text{A}''$ and $2^1\text{A}''$ states of H_2S 207 (1993) 321
- Therien, M.J., see C. Galli 206 (1993) 493
- Thoma, A., see G. Schallmoser 201 (1993) 528
- Thomas, J.K., see X. Liu 204 (1993) 163
- Thompson, D.L., see D.K. Sahm 205 (1993) 241; 210 (1993) 175

Thompson, D.L., see X. Chang	206 (1993) 137
Thompson, D.L., see Z. Yang	206 (1993) 445
Thompson, D.L., see T.D. Sewell	208 (1993) 125
Thompson, W.H. and W.H. Miller, State-specific reaction probabilities from a DVR-ABC Green function	206 (1993) 123
Thomsen, C., see K. Kamarás	202 (1993) 325
Tian, K., see J.-L. Brousseau	202 (1993) 521
Tian, S., see Y. Yue	208 (1993) 311
Tiemann, E., see H. Knöckel	208 (1993) 10
Tiemann, E., see S. Becker	208 (1993) 15
Timbrell, P.Y., see N. Than-Trong	205 (1993) 219
Timonnen, R., see M.G. Bryukov	208 (1993) 392
Tittelbach-Helmrich, D., B.D. Wagner and R.P. Steer, The effect of solvent viscosity on the population relaxation times of the S ₁ states of azulene and related compounds	209 (1993) 464
Tobin, R.G., see J.S. Luo	204 (1993) 445
Tobola, R., see P. Piecuch	210 (1993) 243
Toennies, J.P., see M. Fárník	206 (1993) 376
Toennies, J.P., see M. Lewerenz	206 (1993) 381
Toffoletti, A., see C. Corvaja	210 (1993) 355
Toftlund, H., see F. Jensen	201 (1993) 89
Tokhadze, K., N. Dubnova, Z. Mielke, M. Wierzejewska-Hnat and H. Ratajczak, The evolution of the ν_{HF} band of weak HCN...HF, CH ₃ CN...HF complexes on transition from gas to liquid state	202 (1993) 87
Tokiwa, H., see F. Hirota	208 (1993) 115
Tokue, I., see K. Yamasaki	204 (1993) 106
Tolkatchev, V.A., see S.V. Vasenkov	207 (1993) 51
Tománek, D., see R.S. Ruoff	203 (1993) 438
Tománek, D., see R.H. Baughman	204 (1993) 8
Tománek, D., see Y. Wang	205 (1993) 521; 208 (1993) 79
Tomaru, S., see N. Ooba	207 (1993) 468
Tomaselli, M., B.H. Meier, P. Robyr, U.W. Suter and R.R. Ernst, Probing microheterogeneity in polymer systems via two-dimensional ¹²⁹ xenon NMR spy detection. A heterogeneous model blend system	205 (1993) 145
Tomita, M., see Y. Saito	204 (1993) 277
Tommei, G.E., see R. Ferrando	202 (1993) 248
Tomonari, M., N. Ookubo, T. Takada, M.W. Feyereisen and J. Almlöf, Simplified sum-over-states calculations and missing-orbital analysis on hyperpolarizabilities of benzene derivatives	203 (1993) 603
Toner, W.T., see R.E. Hester	208 (1993) 471
Topaler, M. and N. Makri, Quasi-adiabatic propagator path integral methods. Exact quantum rate constants for condensed phase reactions	210 (1993) 285
Topaler, M. and N. Makri, System-specific discrete variable representations for path integral calculations with quasi-adiabatic propagators	210 (1993) 448
Topol, I.A. and S.K. Burt, The calculations of small molecular conformation energy differences by density functional method	204 (1993) 611
Torcini, A., see U. Balucani	209 (1993) 408
Tosa, V., C. de Lisio and R. Bruzzese, Failure of the linear mixture rule in the vibrational relaxation of CF ₂ HCl in argon	202 (1993) 555

Master index to volumes 201-210

Toscani, S., see V. Agafonov	208 (1993) 68
Tostes, J.G.R., see J.W.D.M. Carneiro	202 (1993) 278
Towrie, M., see R.E. Hester	208 (1993) 471
Toyoda, H., see K.L. Menningen	204 (1993) 573
Trajmar, S., see I. Kanik	208 (1993) 341
Tramer, A., see M. Chergui	201 (1993) 187
Tran-Thi, T.-H., see T. Fournier	208 (1993) 101
Treacy, J., see C. Kelly	207 (1993) 498
Trifunac, A.D., see M.V. Barnabas	204 (1993) 435; 206 (1993) 21
Troe, J., see J. Schroeder	203 (1993) 255
Trollope, K.I., I.R. Gould and I.H. Hillier, Modelling of electrostatic interactions between nucleotide bases using distributed multipoles	209 (1993) 113
Troxler, H., see R. Rüede	203 (1993) 477
Truhlar, D.G., see C.J. Cramer	202 (1993) 567
Truhlar, D.G., see D.W. Schwenke	203 (1993) 565
Truscott, T.G., see R.V. Bensasson	201 (1993) 326; 206 (1993) 197
Tsai, P., see H.K. McDowell	210 (1993) 274
Tsuchiya, J., see J. Takahashi	209 (1993) 479
Tsuchiya, K., see A. Miyoshi	204 (1993) 241
Tsukerblat, B.S. and S.I. Klokishner, Magnetic hyperfine structure of the Mössbauer spectra of mixed-valence dimers in charge-ordered crystals	203 (1993) 55
Tsukuda, T., A. Terasaki, T. Kondow, M.G. Scarton, C.E. Dessent, G.A. Bishea and M.A. Johnson, Photofragmentation of anionic reaction intermediates formed upon electron attachment to 2-chloroacrylonitrile clusters. Evidence for polymer degradation in the cluster regime	201 (1993) 351
Tugov, I.I., see A.I. Pegarkov	203 (1993) 457
Tuñón, I., E. Silla and J.L. Pascual-Ahuir, Continuum-uniform approach calculations of the solubility of hydrocarbons in water	203 (1993) 289
Turnidge, M.L., see G.J. Wilson	207 (1993) 521; 210 (1993) 1

Master index to volumes 201-210

Ubachs, W., see P.F. Levelt	210 (1993) 307
Uchikawa, K., see T. Suga	210 (1993) 411
Uemura, Y.J., see L.P. Le	206 (1993) 405
Ugarte, D., Formation mechanism of quasi-spherical carbon particles induced by electron bombardment	207 (1993) 473
Ugarte, D., see W.A. de Heer	207 (1993) 480
Ugarte, D., How to fill or empty a graphitic onion	209 (1993) 99
Ugozzoli, F., see R. Caciuffo	201 (1993) 427
Ullmann, R., T. Will and D.M. Kolb, Nanoscale decoration of Au(111) electrodes with Cu clusters by an STM	209 (1993) 238
Ulstrup, J., see J.M. Hammerstad-Pedersen	205 (1993) 591
Umanskii, I.M., S.I. Vetchinkin and V.V. Eryomin, Quasiclassical dynamics of a wave-packet prepared by the resonant excitation of a diatomic molecule	208 (1993) 517
Umemura, Y., see A. Hirabayashi	204 (1993) 152
Urry, D.W., L.C. Hayes, T.M. Parker and R.D. Harris, Baromechanical transduction in a model protein by the ΔT_i mechanism	201 (1993) 336
Utrera, L., see M.C. Böhm	202 (1993) 37

- Vahtras, O., see Y. Luo 204 (1993) 587; 205 (1993) 555; 207 (1993) 190
- Vahtras, O., H. Ågren, P. Jørgensen, T. Helgaker and H.J.Aa. Jensen, The nuclear spin-spin coupling in N₂ and CO 209 (1993) 201
- Vaičaitis, V., see R. Rotomskis 202 (1993) 233
- Vala, M., see D. Roser 205 (1993) 6
- Vala, M., see J. Szczepanski 205 (1993) 434
- Valentini, J.J., see A. García-Vela 202 (1993) 473
- Valeur, B., see M.M. Martin 202 (1993) 425
- Vallauri, R., see U. Balucani 209 (1993) 408
- Van Bentum, P.J.M., see P.H.M. van Loosdrecht 205 (1993) 191
- Vander Auwera, J., see A. Pisarchik 206 (1993) 343
- Van der Avoird, A., see B.J. Nelissen 207 (1993) 343
- Vanderbilt, D., see K. Laasonen 207 (1993) 208
- Vanderbilt, D., see C. Lee 210 (1993) 279
- Van der Kamp, A.B., see R.S. Hiemstra 205 (1993) 236
- Van der Zande, W.J., see R.S. Hiemstra 205 (1993) 236
- Van de Waal, B.W., Comment on "Coexistence of fcc and hcp phases of C₆₀" 202 (1993) 341
- Vandoren, J., see M.G. Bryukov 208 (1993) 392
- Van E. Hommes, N.J.R., see M.N. Glukhovtsev 205 (1993) 529
- Van Gunsteren, W.F., see P.M. King 203 (1993) 88
- Van Loosdrecht, P.H.M., P.J.M. van Bentum and G. Meijer, Raman scattering in electronically excited C₆₀ 205 (1993) 191
- Van Loosdrecht, P.H.M., see B.J. Nelissen 207 (1993) 343
- Van Santen, R.A., see W.P.J.H. Jacobs 210 (1993) 32
- Van Tol, M.F.H., J. de Maaijer-Gielbert and B.E. Nieuwenhuys, Critical size of surfaces and means of synchronization for the oscillating reduction of NO by NH₃ over Rh 205 (1993) 207
- Van Willigen, H., see D. Reddy 202 (1993) 120
- Van Willigen, H., see R.P. Pandian 202 (1993) 127
- Van Willigen, H., see C.A. Steren 204 (1993) 23
- Van Wolput, J.H.M.C., see W.P.J.H. Jacobs 210 (1993) 32
- Van Wüllen, C. and W. Kutzelnigg, The MC-IGLO method 205 (1993) 563
- Varandas, A.J.C. and R.F. Nalewajski, Virial theorem constraints on *n*-body terms of potential energy surfaces 205 (1993) 253
- Varma, A., see U. Stafford 205 (1993) 55
- Varma, V., R. Seshadri, A. Govindaraj, A.K. Sood and C.N.R. Rao, An infrared spectroscopic study of the orientational phase transitions of C₇₀ 203 (1993) 545
- Vasenkov, S.V., V.A. Tolkatchev and N.M. Bazhin, Detection of deep traps for gas molecules in the diffusion processes in low-molecular glasses 207 (1993) 51
- Vasil'ev, A.N., see C. Pedrini 206 (1993) 470
- Vatsa, R.K., A. Kumar, P.D. Naik, K.V.S. Rama Rao and J.P. Mittal, Time-resolved infrared fluorescence from 2ν₁ and 2ν₈ modes of CF₂Cl₂ excited by a CO₂ laser 205 (1993) 133
- Vatsa, R.K., A. Kumar, P.D. Naik, K.V.S. Rama Rao and J.P. Mittal, UV absorption spectrum and decay kinetics of CF₂Br in CO₂ laser-induced photodissociation of CF₂Br₂ 207 (1993) 75
- Vatsa, R.K., see A. Kumar 208 (1993) 385
- Vaval, N., K.B. Ghose, S. Pal and D. Mukherjee, Fock-space multireference coupled-cluster theory. Fourth-order corrections to the ionization potential 209 (1993) 292
- Vecchiocattivi, F., see V. Aquilanti 205 (1993) 229

Velasco, S., see A. Medina	202 (1993) 364
Veldkamp, A., see A.W. Ehlers	208 (1993) 111
Veldkamp, A., see A. Höllwarth	208 (1993) 237
Venkataraman, L., see R.A. Jishi	209 (1993) 77
Venkatasubramanian, R., M.D. Saksena and M. Singh, New visible emission spectra of GaBr, GaCl and InCl. Prospects of new laser transitions	210 (1993) 367
Ventrice Jr., C.A., see A. Freitag	210 (1993) 10
Ventura, O.N., see E.L. Coitiño	202 (1993) 479
Vergès, J., see M. Hafid	210 (1993) 45
Verheijen, M.A., see B.J. Nelissen	207 (1993) 343
Verhoeven, J.W., see J. Jortner	205 (1993) 451
Vesovic, V., see E.L. Heck	204 (1993) 389
Veszprémi, T., see M. Fehér	205 (1993) 123
Veszprémi, T., see T. Pasinszki	207 (1993) 384
Vetchinkin, S.I., see I.M. Umanskii	208 (1993) 517
Veyret, B., see I. Bridier	201 (1993) 563
Veziñ, B., Ph. Dugourd, D. Rayane, P. Labastie and M. Broyer, First observation of an excited state of Li ₂ H	202 (1993) 209
Veziñ, B., Ph. Dugourd, D. Rayane, P. Labastie, J. Chevaléyre and M. Broyer, Ionization potential measurements of hydrogenated lithium clusters	206 (1993) 521
Vialle, J.L., see B. Baguenard	205 (1993) 13
Viant, M.R., see A. Carrington	206 (1993) 77
Vieth, H.-M. and C.S. Yannoni, Cross polarization in solid state NMR spectroscopy. Efficient polarization transfer via the non-Zeeman spin reservoir	205 (1993) 153
Viggiano, A.A., see I. Dotan	209 (1993) 67
Vijayakumar, M., see S. Roszak	208 (1993) 225
Vilesov, A.F., see R. Bachmann	203 (1993) 314
Vilesov, A.F., see Ch. Ottinger	208 (1993) 299
Vincent, M.A., J.N.L. Connor, M.S. Gordon and G.C. Schatz, Ab initio electronic structure calculations of stationary points and barrier heights for the ClHCl and HCl ₂ systems	203 (1993) 415
Visticot, J.-P., see A. Lallement	204 (1993) 440
Vodà, M., see V. Ghiordănescu	205 (1993) 410
Vogel, J., see L. Soriano	208 (1993) 460
Vogler, A., see H. Kunkely	206 (1993) 467
Vöhringer, P., see J. Schroeder	203 (1993) 255
Völker, S., see R. Wannemacher	206 (1993) 1
Volokitin, A.I., see R. Zenobi	208 (1993) 414
Vom Felde, A., C.C. Bahr and M.J. Cardillo, Competition between desorption and diffusion at a GaAs(110) surface	203 (1993) 104
Von Arnim, M. and S.D. Peyerimhoff, Effective potentials for spectator groups in molecular systems. Transition energies and transition moments	210 (1993) 488
Vondrák, T., see P. Kubát	205 (1993) 429
Von Helden, G., M.T. Hsu, N.G. Gotts, P.R. Kemper and M.T. Bowers, Do small fullerenes exist only on the computer? Experimental results on C ₂₀ [±] and C ₂₄ [±]	204 (1993) 15
Von Niessen, W., see L. Seidner	205 (1993) 117
Von Schnering, H.G., see H.J. Byrne	204 (1993) 461
Voth, G.A., see G.R. Haynes	207 (1993) 309

Master index to volumes 201-210

Vrehan, Q.H.F., see M. Barmentlo	209 (1993) 347
Vuorimäki, A.H., Fluorine spin diffusion and relaxation in CF_3COOAg	202 (1993) 253

Wada, A., see J. Kubota	204 (1993) 273
Wada, Y., see U. Lemmer	209 (1993) 243
Wagner, B.D., see D. Tittelbach-Helmrich	209 (1993) 464
Waizumi, K., H. Masuda and N. Fukushima, A molecular approach to the formation of KCl and MgCl ⁺ ion-pairs in aqueous solution by density functional calculations	205 (1993) 317
Wakabayashi, T., H. Shiromaru, K. Kikuchi and Y. Achiba, A selective isomer growth of fullerenes	201 (1993) 470
Walch, S.P., Characterization of the minimum energy path for CH(X ² Π) + N ₂ (X ¹ Σ _g ⁺) → HCN(X ¹ Σ ⁺) + N(⁴ S)	208 (1993) 214
Walker, M.J., see J. McCombie	206 (1993) 37
Wallace, S.C., see D.T. Cramb	206 (1993) 515
Wallace, S.C., see J.M. Dawes	208 (1993) 335
Walldén, L., see S.-Å. Lindgren	205 (1993) 391
Wallington, T.J., see O.J. Nielsen	203 (1993) 302
Wallington, T.J., M.D. Hurley and M.M. Maricq, FTIR product study of the self-reaction of FC(O)O ₂ radicals	205 (1993) 62
Walsh, R., see N. Al-Rubaiey	204 (1993) 301
Walther, Th., H. Bitto and J.R. Huber, High-resolution quantum beat spectroscopy in the electronic ground state of a polyatomic molecule by IR-UV pump-probe method	209 (1993) 455
Waltman, C.J., see F.X. Campos	201 (1993) 399
Walton, D.R.M., see P.R. Birkett	205 (1993) 399
Walton, J.H., A.K. Kamasa-Quashie, J.M. Joers and T. Gullion, Spin-rotation relaxation in C ₆₀	203 (1993) 237
Wan, C., Time-resolved resonance Raman anisotropy. Rotational motion studied by Raman spectroscopy	203 (1993) 119
Wan, C., Q. Song and C.K. Johnson, Two-photon-induced anisotropic transient absorption in bacteriorhodopsin	210 (1993) 94
Wan, J.K.S., see I.A. Shkrob	202 (1993) 133
Wander, A., P. Hu and D.A. King, Ambiguities in adsorbate site assignment from vibrational frequencies. A TLEED structural study of (2×1)CO-Pd(110)	201 (1993) 393
Wander, A., see L.D. Mapledoram	208 (1993) 409
Wang, C.Z., see X.Q. Wang	207 (1993) 349
Wang, D. and J.M. Bowman, An adiabatic-bend Franck-Condon model for final rotational distributions in the H + H ₂ O and H + D ₂ O reactions	207 (1993) 227
Wang, D.-J., see X.-G. Peng	209 (1993) 233
Wang, H., see C.N. Baird	202 (1993) 501
Wang, H., see M. He	204 (1993) 563
Wang, H. and M. Frenklach, Modification of Troe's fall-off broadening	205 (1993) 271
Wang, H., F.D. Medina, M.S. Antonious, C. Párkányi, J.E. Haky, D.M. Baird and Y.-D. Zhou, Spectroscopic studies of ZnWO ₄ single crystals	205 (1993) 497
Wang, J., see S. Petrie	204 (1993) 473
Wang, K.-A., see R.A. Jishi	206 (1993) 187
Wang, L., see D. Xu	210 (1993) 315
Wang, L.S., J.M. Alford, Y. Chai, M. Diener, J. Zhang, S.M. McClure, T. Guo, G.E. Scuseria and R.E. Smalley, The electronic structure of Ca@C ₆₀	207 (1993) 354
Wang, R.G., see M. Fárník	206 (1993) 376
Wang, T.-Y., see T.E. Gough	207 (1993) 517

Wang, W., see Y. Zheng	202 (1993) 148
Wang, W., see H. Hou	203 (1993) 555
Wang, X., H. Li, Q. Ju, Q. Zhu and F. Kong, The vibrational quenching of NO($\nu=1-11$) by N ₂ O studied by time-resolved Fourier transform infrared emission spectroscopy	208 (1993) 290
Wang, X.Q., C.Z. Wang, B.L. Zhang and K.M. Ho, Which D ₂ fullerene isomer of C ₈₄ has been observed?	207 (1993) 349
Wang, X.T., see L. Li	202 (1993) 115
Wang, X.-Y., see Z.-L. Cai	210 (1993) 481
Wang, Y., see R.S. Ruoff	203 (1993) 438
Wang, Y., see R.H. Baughman	204 (1993) 8
Wang, Y., C. Lewenkopf, D. Tománek, G. Bertsch and S. Saito, Collective electronic excitations and their damping in small alkali clusters	205 (1993) 521
Wang, Y., D. Tománek and R.S. Ruoff, Stability of M@C ₆₀ endohedral complexes	208 (1993) 79
Wannemacher, R., J.M.A. Koedijk and S. Völker, Spectral diffusion in organic glasses. Temperature dependence of permanent and transient holes	206 (1993) 1
Warren, M., see K. Dietz	207 (1993) 281
Warman, J.M., W. Schuddeboom, S.A. Jonker, M.P. de Haas, M.N. Paddon-Row, K.A. Zachariasse and J.-P. Launay, Intramolecular switching between dipolar resonance structures in singlet and triplet excited states detected by TRMC	210 (1993) 397
Wasielowski, M.R., see H.A. Frank	207 (1993) 88
Watanabe, A., see K. Yamasaki	204 (1993) 106
Watanabe, A., Y. Nagai, M. Matsuda, M. Suezawa and K. Sumino, Amorphous silicon structure of heat-treated poly(<i>n</i> -propylsilylene) studied by far-infrared spectroscopy	207 (1993) 132
Watanabe, K., U. Nagashima and H. Hosoya, An ab initio study of interactions of carbon monoxide and metal electrodes	209 (1993) 109
Watanabe, N., H. Shiromaru, Y. Negishi, Y. Achiba, N. Kobayashi and Y. Kaneko, Reactions of scandium-carbon binary cluster ions C _{<i>n</i>} Sc ⁺ (<i>n</i> =2-6) with O ₂ molecules in an rf ion trap	207 (1993) 493
Watanabe, Y., T. Kameyama, Y. Miki, M. Kuki and Y. Koyama, The 2 ¹ A _g ⁻ state and two additional low-lying electronic states of spheroidene newly identified by fluorescence and fluorescence-excitation spectroscopy at 170 K	206 (1993) 62
Watanabe, Y., see Y. Koyama	208 (1993) 479
Watermann, J., see B. Boddenberg	203 (1993) 531
Weaver, M.J., see Y. Zhang	205 (1993) 508
Weaver, W.L., see K. Iwata	210 (1993) 50
Weeks, D.E. and D.J. Tannor, A time-dependent formulation of the scattering matrix using Møller operators	207 (1993) 301
Wegewijs, B., see J. Jortner	205 (1993) 451
Wei, H., see R.E. Hoffmeyer	207 (1993) 407
Weiner, B.R., see M. He	204 (1993) 563
Weller, H., see A. Hässelbarth	203 (1993) 271
Weller, H., see A. Eychmüller	208 (1993) 59
Wen, Y., see J. Segall	207 (1993) 504
Wendelken, J.F., see L. Šiller	210 (1993) 15
Werner, U., B. Black, M. Ziegeweid and A. Pines, SQUID-NQR of nitrogen-14 in amino acids and small peptides	209 (1993) 17
Werst, D.W., Solvent effects in nonpolar solvents: radical anion reactions	202 (1993) 101

- Werst, D.W., see M.V. Barnabas 204 (1993) 435; 206 (1993) 21
- Wertheim, G.K., D.N.E. Buchanan and J.E. Rowe, Bulk and surface phases of Na_xC_{60} 202 (1993) 320
- Wertheim, G.K., D.N.E. Buchanan and J.E. Rowe, Electronic structure of barium fullerenes 206 (1993) 193
- Westerfield, C. and A.B. Myers, The 2^1A_1 state of cis-hexatriene vapor: resonance Raman spectra 202 (1993) 409
- Wheatley, R.J., A new distributed multipole procedure for linear molecules 208 (1993) 159
- Whitaker, B.J., see G. Hall 203 (1993) 277
- Whitehouse, D.B. and A.D. Buckingham, The vibrational contribution to the polarisability of endohedral $[\text{C}_{60}\text{M}]^{n+}$ complexes (where M=metal atom) 207 (1993) 332
- Whitnell, R.M., see I. Benjamin 204 (1993) 45
- Whyman, G.E., see M.M. Mestechkin 205 (1993) 598
- Wichmann, J., see J. Arnold 203 (1993) 283
- Wierzejewska-Hnat, M., see K. Tokhadze 202 (1993) 87
- Wiesen, P., see K.H. Becker 210 (1993) 135
- Wild, U.P., see M. Pirotta 208 (1993) 379
- Wilkinson, F., see D.J. McGarvey 202 (1993) 528
- Will, T., see R. Ullmann 209 (1993) 238
- Willberg, D.M., M. Gutmann, E.E. Nikitin and A.H. Zewail, A simple description of vibrational predissociation by a full-collision approach 201 (1993) 506
- Williamson, J.C. and A.H. Zewail, Ultrafast electron diffraction. Velocity mismatch and temporal resolution in crossed-beam experiments 209 (1993) 10
- Williamson, J.M., see B.-C. Chang 207 (1993) 62
- Willmott, P.R. and H. Bitto, The role of hyperfine interaction in the dynamics of $\text{S}_1(^1\text{B}_{3u})$ pyrazine 207 (1993) 93
- Wilson, C.C., see R.G. Delaplane 201 (1993) 75
- Wilson, G.J., M.L. Turnidge, A.S. Solodukhin and C.J.S.M. Simpson, The measurement of rate constants for the vibrational deactivation of $^{12}\text{C}^{16}\text{O}$ by H_2 , D_2 and ^4He in the gas phase down to 35 K 207 (1993) 521
- Wilson, G.J., M.L. Turnidge, J.J. Andrew and C.J.S.M. Simpson, Non-resonant (VV) transfer between molecules dissolved in liquid N_2 and in liquid Ar at 85 K 210 (1993) 1
- Wilson, P.J., see R.J. Donovan 205 (1993) 129; 207 (1993) 129
- Wilson, S., see D. Moncrieff 209 (1993) 423
- Wincel, H., see G. Javahery 204 (1993) 467
- Windsch, W., see R. Heidler 209 (1993) 299
- Winkel, J.F., C.A. Woodward and A.J. Stace, Intracuster charge transfer: photoproduct branching ratios for the dissociation of Ar_nCO_2^+ clusters 201 (1993) 569
- Winkel, J.F., see C.A. Woodward 206 (1993) 49
- Winkler, T., see Ch. Ottinger 208 (1993) 299
- Winnewisser, B.P., see J. Koput 204 (1993) 183
- Wittig, C., see J. Segall 207 (1993) 504
- Wolf, H.C., see N. Holl 205 (1993) 25
- Wolfrum, J., see J. Arnold 203 (1993) 283
- Wolfrum, J., see T. Etzkorn 208 (1993) 307
- Wolfsberg, M., see D. Kleinhesselink 205 (1993) 461
- Wolynes, P.G., see D.A. Evensky 209 (1993) 185
- Womes, M., J.-C. Jumas, J. Olivier-Fourcade, F. Aubertin and U. Gonser, High spin ($^5\text{T}_2$)-low spin ($^1\text{A}_1$) equilibrium of iron(II) in $\text{M}_2\text{FeSn}_3\text{S}_8$ thiospinels (M=Cu, Ag) 201 (1993) 555

Wong, A.T. and G.B. Bacskay, Ab initio potential energy surface and vibrational frequencies of N ₂ O	207 (1993) 360
Wong, N.M., see S.B.H. Bach	209 (1993) 57
Woodbury, N.W., see R.G. Alden	208 (1993) 350
Woodward, C.A., see J.F. Winkel	201 (1993) 569
Woodward, C.A., J.F. Winkel, A.B. Jones and A.J. Stace, Infrared predissociation in cluster ions containing a guest chromophore. A gentle route to the dynamics and spectroscopy of heterogeneous systems	206 (1993) 49
Woon, D.E., Accurate modeling of intermolecular forces: a systematic Møller-Plesset study of the argon dimer using correlation consistent basis sets	204 (1993) 29
Wörmer, J., see R. Karnbach	203 (1993) 248
Worrall, D.R., see D.J. McGarvey	202 (1993) 528
Woywod, C., see W. Domcke	203 (1993) 220
Wright, J.C., see J.E. Ivanecky III	206 (1993) 437
Wu, D., see X. Mao	204 (1993) 123
Wu, G., The coset space representation of the algebraic molecular vibrational dynamics. Case study of the SU(2) group	209 (1993) 178
Wu, K.T., C. Mendis, A. Abraham and R. Oldmixon, Production mechanism of H* in the He (2 ³ S) + CH ₂ Cl ₂ reaction	210 (1993) 118
Wu, W.D., see L.P. Le	206 (1993) 405
Wu, X., J.P. Denis, G. Özen, Ph. Goldner, M. Genotelle and F. Pellé, The blue up-conversion luminescence of vitroc ceramic codoped with Tm ³⁺ and Yb ³⁺ ions pumped with 680 nm	203 (1993) 211
Wu, X., see N. Zhang	205 (1993) 178
Wu, X.M. and M.J. Ondrechen, Third-order nonlinear optical properties of finite bridged polymers	205 (1993) 85
Wu, X.-W., see G.-Y. Li	202 (1993) 82; 204 (1993) 529
Wu, Y.-S.M. and A. Kuppermann, Prediction of the effect of the geometric phase on product rotational state distributions and integral cross sections	201 (1993) 178
Wu, Y.-S.M., see A. Kuppermann	205 (1993) 577
Wurfel, B.E., see G. Schallmoser	201 (1993) 528
Wynne, K., see C. Galli	206 (1993) 493

Master index to volumes 201-210

Xia, Y.-X., see F.-Q. Xie	203 (1993) 598
Xiao, L.-Z., see X.-G. Peng	209 (1993) 233
Xie, F.-Q., Y.-X. Xia and M.-B. Huang, Electronic states of the FO radical. An MRSDCI study	203 (1993) 598
Xie, X., see M. Du	201 (1993) 535
Xie, X.B., see L. Li	202 (1993) 115
Xie, Y., see T.P. Hamilton	208 (1993) 106
Xu, D., X. Li, G. Shen, L. Wang, H. Chen and N. Lou, Vibrational population inversion in CS(A) through the dissociative excitation of CS ₂ by Ar(³ P ₂)	210 (1993) 315
Xu, H., see D.E. Adelman	203 (1993) 573
Xu, J., see R. Zenobi	208 (1993) 414
Xu, S. and M.D. Harmony, Halocarbene production in free-jet expansions from a hot nozzle	205 (1993) 502

- Yamabe, S., see K. Hiraoka 202 (1993) 167; 207 (1993) 178; 208 (1993) 491
 Yamabe, S., see S. Okada 209 (1993) 161
 Yamabe, T., see A. Tachibana 201 (1993) 315
 Yamabe, T., see K. Tanaka 202 (1993) 394
 Yamabe, T., see K. Yoshizawa 202 (1993) 483
 Yamabe, T., see M. Okada 209 (1993) 91
 Yamada, Y., H.T. Deng, E.M. Snyder and A.W. Castleman Jr., Copper/antimony and copper/bismuth alloy clusters: magic numbers and electronic structure 203 (1993) 330
 Yamada, Y. and A.W. Castleman Jr., Gas-phase copper carbide clusters 204 (1993) 133
 Yamaga, M., see Y. Gao 210 (1993) 67
 Yamaguchi, K., see M. Nakano 206 (1993) 285
 Yamaguchi, K., see M. Okumura 207 (1993) 1
 Yamaguchi, K., M. Okumura, J. Maki and T. Noro, High-spin ion radicals of polyenes and polyamines. A MO theoretical study 207 (1993) 9
 Yamaguchi, K., M. Okumura, W. Mori, J. Maki, K. Takada, T. Noro and K. Tanaka, Comparison between spin restricted and unrestricted post-Hartree-Fock calculations of effective exchange integrals in Ising and Heisenberg models 210 (1993) 201
 Yamaguchi, M., see N. Kobayashi 205 (1993) 51
 Yamaji, M., T. Tanaka and H. Shizuka, Solvent dependence of triplet energy transfer reaction competing with hydrogen atom abstraction between triplet benzophenone and 1-naphthol studied by laser flash photolysis 202 (1993) 191
 Yamakage, Y., Q.-X. Meng, K. Maeda and T. Azumi, Dynamic nuclear polarization studies of anomalous CIDNP behavior of benzaldehyde 204 (1993) 411
 Yamamoto, S. and K. Hirao, Molecular application of the generalized symmetry adapted cluster theory 204 (1993) 315
 Yamamoto, S. and H. Kashiwagi, CASSCF calculation on dioxygen heme complex with extended basis set 205 (1993) 306
 Yamamoto, S., see O. Takahashi 207 (1993) 379
 Yamanaka, C., see A. Iwata 207 (1993) 137
 Yamasaki, K., A. Watanabe, I. Tokue and Y. Ito, Dispersed emission spectrum of NH_2 (\tilde{A}^2A_1) in the ultraviolet laser photolysis of HN_3 and the mechanism of formation 204 (1993) 106
 Yamashita, M., see R. Ikeda 210 (1993) 78
 Yamashita, M., see H. Ooi 210 (1993) 384
 Yamazaki, I., see A. Osuka 201 (1993) 223
 Yamazaki, I., see M. Mimuro 204 (1993) 101
 Yanagimachi, M., N. Tamai and H. Masuhara, Excited-state proton transfer of 1-naphthol in liquid-solid interface layers. Picosecond time-resolved total internal reflection fluorescence study 201 (1993) 115
 Yáñez, M., see M. Esseffar 209 (1993) 557
 Yang, H.-X., K.S. Shin and W. Gardiner, Rate coefficients for $\text{O} + \text{H}_2 \rightarrow \text{OH} + \text{H}$ and $\text{O} + \text{D}_2 \rightarrow \text{OD} + \text{D}$ by kinetic laser absorption spectroscopy in shock waves 207 (1993) 69
 Yang, J., see U. Lemmer 203 (1993) 28
 Yang, J., see C.G. Joslin 208 (1993) 86
 Yang, S.I., see E. Shin 209 (1993) 427
 Yang, T., see S.A. Hambir 201 (1993) 521
 Yang, T.T., see D.H. Burde 205 (1993) 69
 Yang, X., R.Z. Pearson and G. Scoles, High-resolution IR study of the NCCCH-CO complex 204 (1993) 145

- Yang, Z., Y. Qin and D.L. Thompson, Dynamic potential barrier effects in hydrogen tunneling in trans-cis isomerizations 206 (1993) 445
- Yannoni, C.S., see H.C. Dorn 203 (1993) 549
- Yannoni, C.S., see H.-M. Vieth 205 (1993) 153
- Yannouleas, C. and U. Landman, Multiply charged anionic metal clusters 210 (1993) 437
- Yao, G. and S.-I. Chu, Generalized pseudospectral methods with mappings for bound and resonance state problems 204 (1993) 381
- Yao, S., see H. Hou 203 (1993) 555
- Yartsev, A., Y. Nagasawa, A. Douhal and K. Yoshihara, Solvent and nuclear dynamics in ultrafast intermolecular electron transfer in a diffusionless, weakly polar system 207 (1993) 546
- Yarwood, J., Reply to Comment on "The evolution between slow and rapid chemical exchange processes in a liquid binary mixture" 208 (1993) 557
- Yasuda, A., M. Yoshizawa and T. Kobayashi, Fluorescence spectrum of a blue-phase polydiacetylene obtained by probe saturation spectroscopy 209 (1993) 281
- Yasuda, A. and T. Kobayashi, Quantum beats in systems with nearly equal photon energies of stimulated emission and photoinduced absorption 209 (1993) 531
- Yates Jr., J.T., see R. Zenobi 208 (1993) 414
- Yau, P.Y., T.-W.D. Chan, P.G. Cullis, A.W. Colburn and P.J. Derrick, Threshold fluences for production of positive and negative ions in matrix-assisted laser desorption/ionization using liquid and solid matrices 202 (1993) 93
- Ye, C., see X. Mao 204 (1993) 123
- Ye, C., see Y. Yue 208 (1993) 311
- Yeh, C.S., D.L. Robbins, J.S. Pilgrim and M.A. Duncan, Photoionization electronic spectroscopy of AgK 206 (1993) 509
- Yeh, C.S., see J.S. Pilgrim 210 (1993) 322
- Yeh, I.C., Y.H. Kim and M.S. Kim, Kinetic energy release distribution in $C_6H_6^+ \rightarrow C_6H_4^+ + H_2$. Partitioning of the reverse critical energy 207 (1993) 487
- Yelon, A., see A. Ouhlal 202 (1993) 51
- Yesinowski, J.P., see G. Cho 205 (1993) 1
- Yi, W. and R. Bersohn, The hydrogen atom channel in the photodissociation of HNCO 206 (1993) 365
- Yiu, C.L., see G.L. Guo 203 (1993) 583
- Yoshida, Z., I. Dogane, H. Ikehira and T. Endo, Investigation of hydrogenation of C_{60} using theoretical calculations 201 (1993) 481
- Yoshihara, K., see H. Okamoto 202 (1993) 161; 206 (1993) 388
- Yoshihara, K., see B. Kim 202 (1993) 437; 204 (1993) 407
- Yoshihara, K., see A. Yartsev 207 (1993) 546
- Yoshikawa, T., see Y. Saito 204 (1993) 277; 209 (1993) 72
- Yoshimura, H., see C.D. Dushkin 204 (1993) 455
- Yoshizawa, K., M. Hatanaka, A. Ito, K. Tanaka and T. Yamabe, Quartet states of non-Kekulé molecules 1,3,5-trimethylenebenzene and 1,3,5-triaminobenzene trication 202 (1993) 483
- Yoshizawa, M., K. Nishiyama, M. Fujihira and T. Kobayashi, Exciton transition energy and temperature dependence of ultrafast relaxation of self-trapped excitons in polydiacetylenes 207 (1993) 461
- Yoshizawa, M., see A. Yasuda 209 (1993) 281
- Yoshizawa, M., see H. Ooi 210 (1993) 384
- Yoxall, K.R., see C.J.S.M. Simpson 210 (1993) 5
- Yu, H., S.M. Zain, I.V. Eigenbrot and D. Phillips, Laser-induced fluorescence spectroscopy of jet-cooled phenylcarbazole and a weakly bonded carbazole-benzene complex 202 (1993) 141

Master index to volumes 201-210

Yu, H., E. Joslin and D. Phillips, Laser-induced fluorescence excitation spectra of jet-cooled chrysene	203 (1993) 515
Yu, J. and M. Berg, Resorufin as a probe for the dynamics of solvation by hydrogen bonding	208 (1993) 315
Yu, S., see C. Chen	203 (1993) 307
Yu, Z., see N. Zhang	205 (1993) 178
Yuan, D.-C., see B. Stevens	205 (1993) 440
Yuan, W.-J., see A. Goumri	204 (1993) 296
Yudin, S.G., see S.P. Palto	202 (1993) 308
Yue, Y., F. Deng, H. Hu, C. Ye, Z. Lin and S. Tian, ^{31}P NMR study of the solid solution system $\text{Li}_{1+x}\text{T}_{2-x}\text{In}_x\text{P}_3\text{O}_{12}$	208 (1993) 311
Yuzawa, T., H. Takahashi and H. Hamaguchi, Submicrosecond time-resolved infrared study on the structure of the photoinduced transient species of salicylideneaniline in acetonitrile	202 (1993) 221

Zachariasse, K.A., see J.M. Warman	210 (1993) 397
Zadayan, R. and V.A. Apkarian, Femtochemistry of the liquid phase laser-induced harpoon reaction between Cl ₂ and Xe. Observation of bond formation in real time	206 (1993) 475
Zahradnik, R., see P. Hobza	208 (1993) 497
Zähringer, K., H.-D. Meyer, L.S. Cederbaum, F. Tarantelli and A. Sgamellotti, All ab initio Auger spectra of HF and LiF: energies, intensities and vibrational shifts and broadenings	206 (1993) 247
Zain, S.M., see H. Yu	202 (1993) 141
Zanasi, R., see J. San-Fabián	206 (1993) 253
Zare, R.N., see D.E. Adelman	203 (1993) 573
Zdetsis, A., see M. Mühlhäuser	204 (1993) 617
Zelinger, Z., see P. Kubát	205 (1993) 429
Zellner, R., see H. Saathoff	206 (1993) 349
Zeng, J., N.S. Hush and J.R. Reimers, Enthalpy of hydration and partial molar specific volume as criteria for evaluation of intermolecular potentials. NPT-ensemble Monte Carlo calculations for dilute neon in water	206 (1993) 318
Zeng, J., J.S. Craw, N.S. Hush and J.R. Reimers, Medium effects on molecular and ionic electronic spectra. Application to the lowest ¹ (n, π*) state of dilute pyridine in water	206 (1993) 323
Zenobi, R., J. Xu, J.T. Yates Jr., B.N.J. Persson and A.I. Volokitin, FTIR overtone spectroscopy on surfaces. The C-O mode in chemisorbed methoxy on Ni(111)	208 (1993) 414
Zerbetto, F., see J. Berryhill	205 (1993) 39
Zerbetto, F., see G. Orlandi	208 (1993) 441
Zerbi, G., see A. Cybo-Ottone	208 (1993) 345
Zerda, T.W. and Y. Shao, Reorientational relaxation of cyclohexane in porous silica	209 (1993) 247
Zewail, A.H., see D.M. Willberg	201 (1993) 506
Zewail, A.H., see J.C. Williamson	209 (1993) 10
Zgierski, M.Z., see J. Berryhill	205 (1993) 39
Zhan, C.-G., Molecular maximum bond energy structures from maximum overlap symmetry hybrid orbital calculation	209 (1993) 325
Zhang, B., J.-K. Zhu and Y. Li, DV-Xα studies on the vibrational structure of alexandrite crystal	206 (1993) 103
Zhang, B.L., see X.Q. Wang	207 (1993) 349
Zhang, J., see H. Hou	203 (1993) 555
Zhang, J., see L.S. Wang	207 (1993) 354
Zhang, J.Z., see B.J. Schwartz	203 (1993) 503
Zhang, J.Z.H., see O. Sharafeddin	204 (1993) 190
Zhang, N., Z. Yu, X. Wu, Z. Gao, Q. Zhu and F. Kong, The formation of hydrogenated carbon clusters by laser ablation	205 (1993) 178
Zhang, P., see L. Zheng	204 (1993) 571
Zhang, Q., see L. Zheng	204 (1993) 571
Zhang, X.-G., see Z.-L. Cai	210 (1993) 481
Zhang, Y., Y. Du, J.R. Shapley and M.J. Weaver, Surface-enhanced Raman spectroscopy of electroactive films of C ₆₀ and an Ir-C ₆₀ complex on gold: symmetry lowering, electron localization, and counteraction effects	205 (1993) 508
Zhang, Y., see X.-G. Peng	209 (1993) 233
Zhang, Y.-H., see X.-G. Peng	209 (1993) 233
Zhao, X., S. Ong and K.B. Eisenthal, Polarization of water molecules at a charged interface. Second harmonic studies of charged monolayers at the air/water interface	202 (1993) 513

Zhao, X., see W. Zhu	204 (1993) 538
Zhao, Y. and D.W. Setser, Generation of the $\text{PF}_2(\tilde{a}^4\text{A}_2)$ radical and assignment of the $\text{PF}_2(\tilde{a}-\tilde{\text{X}})$ emission spectrum	210 (1993) 362
Zhao, Y.-Y., see X.-G. Peng	209 (1993) 233
Zheng, L., P. Zhang, R. Huang, Y. Zhu and Q. Zhang, Formation and detection of boron hydrides in plasma	204 (1993) 571
Zheng, Y., W. Wang, J. Lin, Y. She and K.-J. Fu, The observation of gas-phase carbon dioxide complex $\text{W}(\text{CO})_5(\text{CO}_2)$. Kinetics and bond energy for reaction of CO_2 with $\text{W}(\text{CO})_5$	202 (1993) 148
Zheng, Y. and D.A. Shirley, Multiple-scattering enhanced depth sensitivity of angle-resolved photoemission extended fine structure	203 (1993) 114
Zheng, Y., Z. Hussain and D.A. Shirley, The influence of calculated phase shifts on the precision and accuracy of ARPEFS-derived structural parameters	206 (1993) 161
Zhong, D. and D.W. Setser, Generation of $\text{Xe}(6s' ^3\text{P}_0)$ atoms by optical pumping in a flow reactor. Reactions with N_2 and halogen-containing molecules	207 (1993) 555
Zhong, Q., see W. Zhu	204 (1993) 538
Zhou, P., see R.A. Jishi	206 (1993) 187
Zhou, X., see R. Liu	207 (1993) 185
Zhou, Y.-D., see H. Wang	205 (1993) 497
Zhou, Z., Ab initio construction of Yang's divide-and-conquer method	203 (1993) 396
Zhu, J.-K., see B. Zhang	206 (1993) 103
Zhu, Q., see W. Zhu	204 (1993) 538
Zhu, Q., see N. Zhang	205 (1993) 178
Zhu, Q., see M.S. Child	207 (1993) 116
Zhu, Q., see X. Wang	208 (1993) 290
Zhu, W., X. Zhao, D. Han, R. Li, Q. Zhong and Q. Zhu, Molecular beam studies of 3- $\text{C}_3\text{H}_5\text{Br}$ and 1- $\text{C}_3\text{H}_5\text{Br}$. Competition between photodissociation and isomerization	204 (1993) 538
Zhu, W., see Y. Huang	206 (1993) 96
Zhu, Y., see L. Zheng	204 (1993) 571
Ziegeweid, M., see U. Werner	209 (1993) 17
Ziegler, L.D., see D.J. Campbell	201 (1993) 159
Ziegler, T., see A. Bérces	203 (1993) 592
Zimmerer, G., see R. Karnbach	203 (1993) 248
Zingher, E. and Y. Haas, Jet-cooled exciplexes. A multiphoton ionization study of the 1-cyanonaphthalene-triethylamine system	202 (1993) 442
Zinin, E.I., see C. Pedrini	206 (1993) 470
Ziurys, L.M., see M.A. Anderson	205 (1993) 415
Zwanenburg, G. and P.J. Hore, EPR of spin-correlated radical pairs. Analytical treatment of selective excitation including zero-quantum coherence	203 (1993) 65
Zyss, J., C. Dhenaut, T. Chauvan and I. Ledoux, Quadratic nonlinear susceptibility of octupolar chiral ions	206 (1993) 409

Electron Paramagnetic Resonance of d Transition Metal Compounds

by F.E. Mabbs and D. Collison, University of Manchester, Manchester, UK

Studies in Inorganic Chemistry Volume 16

Electron paramagnetic resonance (epr) spectroscopy is a sensitive and versatile method of studying paramagnets, which is finding increasing use in chemistry, biochemistry, earth and materials sciences.

The technique is treated both qualitatively and quantitatively, with a progressive increase in sophistication in each succeeding chapter. Following a general introductory chapter, the first half of the book deals with single unpaired electron systems and considers both metal and ligand Zeeman, hyperfine and quadrupole interactions. The simulation of these spectra is discussed, followed by the relationship between spin-Hamiltonian parameters and models of the electronic structures of paramagnets. The second half of the book treats multiple unpaired electron systems using the same philosophy. An introduction to the epr properties of cluster compounds and of extended exchanging systems is also given. There is a chapter on linewidths and lineshapes, and an extensive appendix containing much additional information. A wide-ranging library of simulated and experimental spectra is given, as well as graphical data which should aid spectrum interpretation. Each chapter contains key references and there is a substantial subject and keyword index.

This book is designed to teach epr spectroscopy to students without any previous knowledge of the technique. However, it will also be extremely useful to researchers dealing with paramagnetic d transition metals.

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EUROGEL '91

Progress In Research and Development of Processes and Products from Sols and Gels

Proceedings of the 2nd European Conference on Sol-Gel Technology,
Saarbrücken, Germany, 2-5 June 1991

edited by S. Vilminot, R. Nass and H. Schmidt

European Materials Research Society Monographs Volume 5

Eurogel '91 is the second conference to report on the developments in research and technology of European laboratories and industry. The volume focuses on the scientific and technological progress in the field, as well as providing a global overview of the latest developments. The fifty presented papers report on many new themes and research groups.

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The Chemical Physics of Solid Surfaces

edited by D.A. King and D.P. Woodruff

Volume 6: Coadsorption, Promoters and Poisons

Although there has been a tremendous development of new techniques to facilitate the study of well-characterised surfaces, there remains a dearth of publications devoted to the application of these methods. This is particularly true in the case of multi-technique studies, directed to understanding key aspects of surface chemistry and physics. This series of books sets out to rectify this state of affairs by providing reviews which concentrate on the scientific achievements in terms of new understanding of the chemical physics of surfaces, rather than the methodology. Since the earlier volumes have appeared, there has been an increasing shift of emphasis to these multi-faceted approaches to understanding surface chemical problems, which makes the series even more appropriate to the needs of the research community.

The present volume provides particularly clear evidence of this growth. In the specific area of application of heterogeneous catalysis, substantial progress is being made in confronting problems of increasing complexity, such as those associated with *Coadsorption, Promoters and Poisons*, which forms the subject matter of this book. This progress is reflected in sophisticated theoretical calculations as well as experiments, and both areas are covered in chapters which are written by acknowledged experts in the field. Specific problems covered include the effect of

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The book should be of interest to the many researchers in the field of surface science (coming from backgrounds in chemistry, physics and materials science), as well as to those interested in heterogeneous catalysis.

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